REPORT RESUMES

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THE NEBRASKA ECONOMY--MANPOWER AND ECONOMIC GROWTH.

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NEBRASKA'S POPULATION AND ECONOMIC GROWTH WERE COMPARED WITH THAT OF THE NATION FROM 1910 UNTIL THE PRESENT, WITH SPECIFIC ATTENTION TO NEBRASKA'S ECONOMIC DEVELOPMENT IN RECENT YEARS. PUBLISHED MATERIAL WAS THE SOURCE OF THE DATA. FROM 1900 TO 1960, NEBRASKA'S POPULATION GROWTH RATE WAS ONE-THIRD THE NATIONAL RATE. THE NET OUT-MIGRATION AVERAGED 10 PERCENT OF THE AVERAGE POPULATION IN EACH OF THE THREE MOST RECENT DECADES. THE AVERAGE ANNUAL RATE OF GROWTH OF TOTAL REAL PERSONAL INCOME WAS 2.28 PERCENT, 1.17 PERCENTAGE POINTS BELOW THE NATIONAL RATE. THIS HAS BEEN INFLUENCED UNFAVORABLY BY THE ORIENTATION OF THE NEBRASKA INDUSTRY MIX TOWARD ECONOMIC SECTORS WHICH HAVE BECOME RELATIVELY LESS IMPORTANT TO THE NATION. RECOMMENDATIONS INCLUDED--(1) PASSING OF AN "ECONOMIC GROWTH ACT," (2) CREATING AN ECONOMIC ADVISORY COUNCIL, (3) ESTABLISHING A DIVISION OF ECONOMIC ANALYSIS WITHIN THE EXECUTIVE DEPARTMENT OF THE STATE GOVERNMENT, (4) ELEVATING THE PRESENT NEBRASKA DIVISION OF RESOURCES TO THE STATUS OF DEPARTMENT OF ECONOMIC DEVELOPMENT, (5) DRAFTING AND IMPLEMENTING A DETAILED ECONOMIC DEVELOPMENT PLAN, (6) PLANNING VOCATIONAL AND GENERAL EDUCATION PROGRAMS, AND (7) ENCOURAGING INDUSTRIAL DEVELOPMENT ON A SELECTIVE BASIS. (PS)

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PREFACE

While there are analyses and histories of the economy of the state of Nebraska, none trace the broad economic growth and development patterns and evaluate their implications for recent years. Although this study is not a complete annotation and evaluation of economic change, it does record, describe, and evaluate aggregate economic patterns as they appear in the more important and readily available indicators of economic growth. Economic change is interpreted in a manpower context, with emphasis being placed upon economic development since World War II. The major contribution of this study is intended to be the furnishing of an empirical economic base in order that future economic growth and manpower development programs can be better understood, formulated, and implemented in Nebraska.

This study of the Nebraska economy received support from numerous individuals in the Department of Economics at the University of Nebraska to whom the author is indebted. Professor Campbell R. McConnell provided invaluable guidance in the preparation of this manuscript. Professors Theodore W. Roesler and John R. Felton of the Department of Economics provided helpful assistance. Professor John Coster of the Department of Agricultural Education was also instrumental in the completion of this study. Financial support was provided by two agencies of the Federal Government: the Bureau of Reclamation of the Department of the Interior, and the Office of Education of the Department of Health, Education, and Welfare. This, too, is gratefully acknowledged. All responsibility for facts and analyses rests with the author.

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THE NEBRASKA ECONOMY: MANPOWER AND ECONOMIC GROWTH

By

Ronald A. Wykstra

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CHAPTER I

INTRODUCTION

The economic growth of states and regions in the American economy follows divergent patterns. During the period from 1910 to 1950, for example, the labor force in Nebraska grew at a slower rate than did the national labor force. This state had over one-quarter of a million fewer workers than would have been the case if growth in Nebraska had occurred at the national rate. More recently, it has been observed that employment in Nebraska increased 25 percent from 1939 to 1958. This increase does not compare favorably to the nation as an employment "growth gap" of 62,331 persons occurred over this time period. In this same period of time the state increased its relative commitment to agriculture when compared to the nation. In 1939, 46.1 percent of total employment originated in the agricultural sector in Nebraska, a ratio 1.7 times as great as the national average.[1] Agricultural employment in 1958 was 30.7 percent of total employment in Nebraska, as absolute specialization in agriculture declined in Nebraska. This compares to a national average of 12.9 percent of employment in agriculture. Thus, Nebraska's reliance on this sector was 2.3 times as great as the nation's in 1958. This is important because agricultural specialization does bear heavily upon the growth problems of this state.[2]

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[1] Data are from Harvey S. Perloff, How a Region Grows, Supplementary Paper No. 17 (New York: Committee for Economic Development, 1963), pp. 64-5, 78-9, and 92. Agricultural employment includes persons employed directly in farming.

The current position of the Nebraska economy reflects historical patterns initiated by the early development of agricultural and related primary resources. This furnished a development base for the appearance of ancillary economic activities--activities which tend to number among those that currently are declining or static in relative importance. In short, the current "satellite" industry structure has not provided adequate job opportunities for residents of the state. The fact that these growth trends critically affect the well-being of area residents is apparent to all. Nebraska, for example, has experienced difficulty in maintaining perhaps the most vital growth ingredient of all--human resources. Employment opportunities have been provided for some of the area's released agricultural population, and economic growth has been more rapid in some sectors than in others. At the same time, the growth base of the state (in terms of industry structure) is relatively small and the nature and extent of future area development is a substantial unknown. The future for the area is complicated by this uncertainty, by inadequate knowledge concerning past and present growth trends, and by lack of assurance the region has concerning its ability to cope with the complex and nearly endless variety of situations which a dynamic national economy promises to produce in the years ahead.

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[2] These same general developments are apparent in contiguous states in the Midwest. The total labor force "growth gap" for the four-state area of Nebraska, Iowa, Kansas, and Missouri was .3 million between 1939 and 1958.

The impetus for this study is furnished by (1) a widespread area concern for the present and future growth potential of the state and (2) concern for the development and utilization of human resources presently residing in the state. Although the Nebraska economy cannot be described fairly as depressed, a detailed awareness of the nature of the state economy and of the existence and location of unused potential is necessary to attain optimum future exploitation of this growth potential. Policy implementation is also necessary, but effective policy requires analysis first. An understanding of the magnitude, the incidence, and the direction of sluggish growth rates and undesirable population, income, and employment patterns within the state economy is a requisite to the application of policies designed to promote economic viability.

The Regional Research Design

The problem. It is generally alleged that the Nebraska economy has not fully participated in the process of economic development experienced by the nation in recent years. This thesis has not been subject to recent analysis, however, and its manifold ramifications have not been recognized and investigated fully.[3] Furthermore, information which is available on the subject of economic growth and manpower development in Nebraska is fragmentary and must be drawn from a variety of sources. These conditions have produced a retardation of knowledge concerning the present economic structure of the state economy; the ways in which the economy has changed in recent years; the future economic development potential of this area; and the implications which inhere under these circumstances for manpower utilization and development. Taken together, these represent a cogent case for regional economic research in Nebraska.

Objectives. The immediate objective of the present study is to describe the nature of Nebraska's economic development in recent years. It is hoped that this will augment the development potential of the area by formulating a basis from which an action program to stimulate economic growth and manpower development can be launched. The intent is to provide an integrated overview of Nebraska's economic development, focusing attention upon the principal lines of growth and manpower development since World War II. This is not an attempt to construct an inventory of productive resources in the state, nor is it intended to produce a compendium of data which relates to the subject at hand, although such information is, in part, a natural by-product of the analysis. Rather, major changes, problems, and potentialities of the state economy will be investigated to the end that in the future (1) more pointed and specialized research efforts can be undertaken, and (2) public policy can be approached more intelligently.

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[3] The nature and incidence of net out-migration or human capital disinvestment is typical of these ramifications.

The broader purpose of this study delineated above is structured upon the following specific objectives:

1. Analysis of recent changes in the Nebraska economy in order that an understanding of the industry structure, balance, and specialization patterns might be gained.

2. Evaluation of the comparative growth position of the Nebraska economy relative to the nation in order that (1) the nature, direction, and interrelations of regional specialization might be assessed, and (2) the exploitation of export advantages and closing of development voids now supported by imports from other areas can be accomplished.

3. Evaluation of the nature and severity of manpower problems and potentialities for Nebraska.

The analytical framework. Change in regional economies is transmitted by and affects numerous variables related to the growth and development process. One of the more important of these is human resources. While physical capital and natural resources play an important role in the growth process, human resources are no less important. Because consideration of economic development in its complex entirety is not a feasible undertaking, human resources in some ways serve as the focal point in the present study.[4]

The analytical framework is intended to depict the economic activities of the area which generate growth in employment and incomes, to reveal the major problems attendant to past patterns of development, and to explore their implications for economic growth and manpower development in the future. These analytical procedures which are used are also designed to reveal key structural relations in the Nebraska economy and the ways in which this economic structure has changed in recent years. Emphasis is put upon uncovering complementarity within the existing industry mix for the economy of Nebraska. Particular attention, therefore, must be devoted to the growth contribution of the area specialization mix and the extent to which Nebraska has attracted slow or rapid growth sectors to its industry mix in recent years.

Limitations. It is necessary to recognize that this study has several limitations. The selection of an area for analysis on the basis of political boundaries often bears little logical relationship to economic criteria to which one otherwise might adhere. Data used in the analysis likewise are a limiting factor in terms of (1) the selection of particular data by the author, which is conditioned by his conception of the problem; (2) the level of aggregation and approximation which is inherent in the available indicators of growth and development; and (3) the selection of time periods for analysis. The analytical contents also draw almost exclusively on published data and are subject to the errors which can result from the use of approximations of economic conditions. These limitations are not serious enough, however, to invalidate the findings or constrain the analysis to something less than that which is intended.

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[4] No pretense is made that this study is exhaustive. Only those factors which were felt by the author to be most relevant in conditioning the process of economic growth and human capital development were subjected to explicit analysis. Furthermore, the study tends to be descriptive in a large measure, and not oriented towards the testing of hypotheses. This results from the fact that it is necessary to know the historical structure of the economy prior or simultaneous to asking "why."

Indicators of economic growth. There are several alternate growth indicators. The movement of populations represents a collective reaction to changing economic circumstances and anticipations. Another composite measure of a regional economy is provided by total personal income. Employment and occupation patterns are also revealing, particularly with respect to the structural aspects of an area economy. There is a critical interaction manifest between total income and population growth patterns in per capita income. Per capita income data reveal this interplay; therefore, these data are an important indicator of the performance of a region, representing a synthesis of the "better" and the "bigger" dimensions associated with regional growth patterns.[5] Per capita income patterns must be interpreted properly for regional analysis purposes, however. Population movement in conjunction with differential income growth between regions poses a special problem to the regional analyst which is not present at the national level. Large increases in total output for some of the most rapidly growing regions in the nation are often absorbed in supporting larger numbers of people. As a consequence, per capita income may not grow. Conversely, increasing per capita income may be influenced by net out-migration.

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[5] Wallace C. Peterson, "Recent Growth Record of the American Economy," The American Journal of Economics and Sociology (January, 1964), p. 10.

Differential growth among regions is subject to improper interpretation. Statistical differentials between growth rates are sometimes considered to be small when their effects are large. The difference, for example, between employment growth rates of 3.0 and 4.0 percent annually is not as trivial a matter as it might appear at first glance. The differential is 1.0 percentage points, but it is not just 1.0 percent _larger_. It also can be thought of as being one-third, or 33.3 percent larger. As Edward Denison has pointed out in his analysis of the national economy, this seemingly small differential means that if employment grows 4.0 percent a year for 20 years in area A and 3.0 percent annually in area B, the differential _increase_ in employment in A at the end of this period of time will be larger by 44.0 percent.[6] Shifting the context to per capita income for the moment, the assumption that population increases at an average rate of 2.0 percent a year in both areas produces an even more startling illustration of the significance of growth differentials. A region in which income grows at an annual rate of 4.0 percent would experience a per capita increase of 2.0 percent a year, or an increase in per capita income twice as large as that of a 3.0 percent growth region.

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[6] Edward F. Denison, _The Sources of Economic Growth in the U.S. and the Alternatives Before Us,_ Supplementary Paper No. 13 (New York: Committee for Economic Development, 1962), pp. 1-3.

Description of the Nebraska Economy

The state of Nebraska is a diverse geographic area which is exposed to different climatic conditions and enjoys variant physiographic circumstances. A vast amount of the surface of Nebraska is covered with loose sandy soil and, at the same time, the state has great stocks of unexploited water resources, rich farmlands, and is comprised in part of urban centers. This geographic diversity suggests that a description of the basic characteristics of Nebraska involves recognition of several areas within the state. Figure I-1 depicts the state of Nebraska as being comprised of nine economic areas. These economic areas were established by the Census Bureau of the U.S. Department of Commerce and they include the two urban areas of Omaha and Lincoln.[7]

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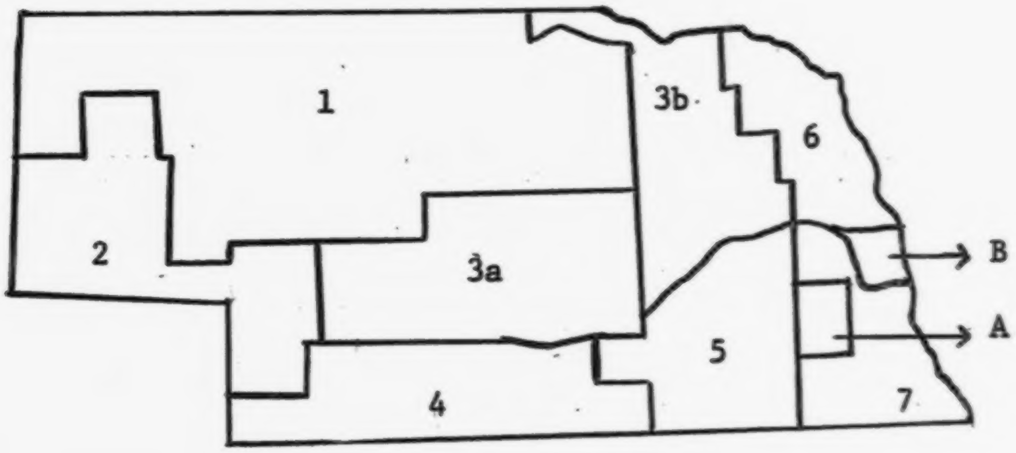
[7] For additional detail on area delineation see D. F. Bogue and C. L. Beale, Economic Areas of the United States (New York: The Free Press of Glencoe, 1961). Much of the description of the state which follows is drawn from this source. Also see G. E. Condra, Industrial Nebraska in Outline, Nebraska Conservation Bulletin, No. 28 (Lincoln: University of Nebraska, 1946); U.S. Department of Commerce, Bureau of the Census, Censuses of Agriculture and Population; and U.S. Department of Agriculture, Soil Conservation Service, Nebraska Soil and Water Conservation Needs Inventory, 1962.

The Sand Hills (economic area 1 of Figure I-1) comprises nearly one-fourth of the total state area, yet it contained less than 5.0 percent of the total 1960 population. The land consists of loose sand ridges and dunes. The area has few major rivers and streams and the soil quickly absorbs the 15 to 20 inches of rainfall received each year.

FIGURE I-1

ECONOMIC AREAS IN NEBRASKA



1 -- Sand Hills (SH)
2 -- Western (W)
3a -- Central (C)
3b -- Central (C)
4 -- Southern (S)
5 -- South Central (SC)
6 -- North East (NE)
7 -- South East (SE)
A -- Lincoln (L)
B -- Omaha (O)

About three-fourths of all farmland is used for grazing cattle on the grass cover which holds the sandhills in place. Consequently, the average farm size approximates 2,000 acres, although there is ample water for grazing. Croplands constitute about one-fourth of the area, and they are devoted mainly to wild hay with very limited amounts of wheat and corn grown on the fringes of this economic area.

This sparsely populated area experienced a decline of 11.2 percent in its rural population from 1950 to 1960. Of the total inhabitants of this area, 83.4 percent were classified as rural in 1960.

The Western economic area (area 2) contains one urban place over 10,000 in population, the city of Scottsbluff, which is a food processing center for this highly irrigated economic area. Large-scale irrigated farming is prevalent in the eastern portion of area 2 and around the valley of the North Platte River. Ranching and wheat growing are leading economic activities of the plains on both sides of the Platte River Valley. The topographic and soil conditions of the valley are well suited to irrigated farming, which produces about one-fifth of total farm income in the area. The leading crops are sugar beets, corn, potatoes, beans, and alfalfa. Moving westward in this area one encounters a progressively higher elevation of rolling prairie used for dry-land winter wheat, wild hay, and grazing of both cattle and sheep. The income from grain and livestock sales provides most of the livelihood for area residents.

Central Nebraska is comprised of two economic sub-areas, areas 3a and 3b in Figure I-1. The Platte River area's population (the western portion of Central Nebraska) is largely urban (48.4 percent) in comparison to several other areas in the state. Grand Island, which serves as a manufacturing and distribution center; North Platte, also a trade and distribution center; and Kearney, a trade area and college town, are three urban places which enjoyed population increases in excess of 10 percent in the last decennial period. The rural population declined 9.5 percent and the urban population increased 12.1 percent between 1950 and 1960, although the total population remained virtually unchanged over this period. Because of water conservation along the Platte and ground water supplies, irrigation is feasible. Consequently, the area specializes in corn and livestock. Corn, wheat, and hay are also grown in the one-half of the area in crops, and other land is used for pasture purposes. Because of some water uncertainties, low crop yields can appear in the area. The northern part of the Central economic area (3b of Figure I-1) is primarily rural (76.9 percent rural population in 1960) with gently rolling topography. The rural population of the area declined 8.3 percent from 1950 to 1960. Moisture is somewhat limited relative to the needs for the more than two-thirds of all land in crops. Corn, oats, and hay are principal crops in the area, which also is reliant on both hog and cattle farming. There are two urban places with 1960 populations in excess of 10,000 persons--Columbus and Norfolk. The population of Columbus almost doubled between 1950 and 1960 because of its attraction as a manufacturing, food processing, distribution, and rural trade-area center.

The Southern economic area has no urban places with populations of 10,000 persons or more, and four-fifths of the 1960 population was rural in location. The rural population declined 15.9 percent from 1950 to 1960, while the area's total population declined 11.8 percent. This area is plagued by inadequate moisture; however, it has a relatively fertile loess soil which is devoted primarily to corn and wheat. Pump irrigation is used primarily for irrigated cropland, and pastures are not relatively productive. As a result, hog production is the major livestock enterprise. The area has few manufacturing activities, and it appears to be faced with the least prosperous future of all economic areas in the state.

The South Central area derives most of its economic support from cropland, specializing in corn, wheat, and oats. About one-fifth of all farmland is pastured; thus, cattle and hogs are also important income sources. The topography of the area is gently undulating and generally well suited to cropland farming. One-third of the 1960 population was classified as urban, and there was a decline of 10.9 percent in the rural population from 1950 to 1960. The total population of the area decreased 5.1 percent, although Hastings, the only sizable urban place, experienced a population increase of 5.9 percent. Hastings is a trade area and is engaged in food processing and manufacturing in a limited way.

The North East economic area is one of the richest farming areas in Nebraska, and it contained one of the most rapidly growing urban places in the state between 1950 and 1960, Fremont. The area population, one-third urban in 1960, experienced the lowest 1950 to 1960 decline in rural population (5.9 percent) of any non metropolitan economic area in the state. Fremont, the only sizable urban place in the area, is a service and trade center. The health of the economy of the area is reflected in the fact that the average value of farm land and average income per farm is higher here than in any other economic area. The topography of the area is rolling to slightly hilly and the soil is a productive silt loam. Over three-fourths of the total area land surface is cropland, consisting of corn, oats, and hay. Corn-hog farming is one of the more important sources of farm income in the area, as livestock sales provide about four-fifths of all farm income.

The South East economic area of Nebraska was also approximately one-third urban in 1960 and the rural population declined 10.7 percent in the last census period. The area specializes in livestock production primarily, with considerable cash grain sales also. The land is relatively fertile, although it is subject to erosion because of the hilly topography and silty soil. Over three-fourths of all farmland is in crops, primarily corn and wheat with oats and hay being of lesser importance. Livestock, however, is the primary source of farm income to rural residents. Beatrice, the only urban place of any size in the area, is a farm service center and also contains some manufacturing activities. The adjoining metropolitan economic areas of Lincoln and Omaha no doubt service much of this area's population.

The dominance of agricultural activities in the Nebraska economy examined thus far is overwhelming. Fully two-thirds of the population of the eight areas above were classified as rural in 1960, even though the rural population declined 10.2 percent from 1950 to 1960. These areas contrast sharply with the two metropolitan economic areas in Nebraska, however. The economic base of the Lincoln area centers around government, education, and trade servicing for both the surrounding rural area and the sizable white-collar work force. Insurance and some manufacturing augment the base of this urban area. Omaha is a larger and more heavily industrialized metropolitan economic area. Food processing, transportation, and marketing form the backbone of the area economy which enjoys a fairly diversified base compared to the rest of the state. About one-third of the total population in the state resides in these two areas, both of which experienced population increases in excess of 20 percent between 1950 and 1960.

Growth of Regional Economies

It is necessary to consider briefly the meaning of economic growth and the perspective assumed in the study of economic growth patterns (e.g., regional or national) in that these concerns may condition the concept of the process of economic growth.

Economic growth can be interpreted to mean several things. The terminology may symbolize any combination of conditions or aspirations in a political, social, or economic context, including such diverse circumstances as social modernization, political independence, or industrialization. For the purposes of this study, it is assumed that the forces of economic growth are reflected in aggregate population, income, and employment indicators.[8] Interest in economic growth at the regional level can contribute to a better understanding of the economy which is a synthesis of several regional economic units. A deeper understanding of structural changes in the region and the range of regional reactions to aggregative dynamics can contribute to improved growth potential for the nation as well as the region.[9] Thus, there exists a broad base of support for maintaining a regional point of view in the analysis of economic growth. A regional perspective to economic growth is as real or factual as the existence of "regions" within an aggregative economy. This does not mean that all attempts to encourage regional growth and development are necessarily in the national interest. Similarly, all forms of economic growth are not necessarily desirable, even though development is a widely pursued objective which frequently is viewed as a panacea to a multitude of problems. Furthermore, economic growth is not necessary in a region to improve the welfare of residents in an area, since net out-migration may lead to an increase in income per capita, even though total income does not grow.

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[8] For more detailed elaboration on the meaning of economic growth see Fredrick Harbison and Charles Myers, Education, Manpower, and Economic Growth (New York: McGraw-Hill Book Company, 1964), p. 2; Denison, The Sources of Economic Growth . . . , pp. 1-3; Peter Gutmann, "The Anatomy of Economic Growth," Economic Growth: An American Problem, P. M. Gutmann, ed. (Englewood Cliffs: Prentice-Hall, Inc., 1964), pp. 1-4; and Simon Kuznets, "Some Conceptual Problems of Measurement," Economic Development and Cultural Change, University of Chicago Press (October, 1956), pp. 6-9.

The role of human resources. Human resources not only are affected by economic growth in several obvious ways; they also are a primary determinant of economic growth. That is, there is a welfare and a capacity-for-development dimension to manpower in the economic growth context. Both have become matters of increasing concern in contemporary times.[10] Recognition of the growth role of human resources on an expanded scale in recent years has resulted in the incorporation of this factor of production into the core of economic analysis. These developments do not appear to be temporary; rather, they typify reactions to certain economic problems associated with the growth and decline of regions and entire nations.[11]

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[9] Denison, The Sources of Economic Growth . . ., pp. 9-10.

The components of development policy have been summarized in terms of several needs, including, as Perloff has noted, the need for investment:

> . . . in human resources, in development of natural resources, in plant and equipment, and in social overhead. Investment is needed first in the human resources--to develop skillful, well-equipped individuals.[12]

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[10] These concerns are not entirely new, although the recent emphasis does represent a change of pace. Adam Smith, for example, stressed the importance of education and the development of human resources as a component part of the "fortune of society." Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations (New York: Random House, 1937), Book II, pp. 265-66. Alfred Marshall similarly noted that " . . . the most valuable of all capital is that invested in human beings." Alfred Marshall, Principles of Economics (8th ed., London: MacMillan & Co., 1930), p. 216. More recently, the emergence of manpower development agencies and efforts at the federal government level attest to both dimensions. See, for example, Eli Ginzberg, Human Resources: The Wealth of a Nation (New York: Simon and Schuster, 1958), pp. 24-41; and U.S. Senate, Committee on Labor and Public Welfare, Subcommittee on Employment and Manpower, Exploring the Dimensions of the Manpower Revolution, Vol. I, 88th Cong., 2nd Sess., 1964.

[11] Entirely new specialties, for example, are on the verge of developing in the areas of medical and educational economies. Leo F. Schnore, "The Measurement of Human Resources in a Regional Accounting Framework," Elements of Regional Accounts, Werner Z. Hirsch, ed., Resources for the Future, Inc. (Baltimore: The John Hopkins Press, 1962), pp. 147-48.

[12] Perloff, How a Region Grows, pp. 144-45.

Investment in human capital, a costly but necessary requirement for economic development, is one which is uniquely dependent upon and influenced by policies and efforts in the public sector. The fluidity of human capital is especially important, since a sub-national economy may make substantial investments in this resource and immediately lose much of its outlay because of inattention to other development dimensions. Human resources are a requisite input to economic growth, just as physical capital is a prime growth ingredient. While both have an input role in common, only the latter has been formally incorporated into the theory of economic growth.[13]

Perhaps the most definitive work to date which lends quantitative credibility to the growth role of human resources is that of Edward Denison. Denison argues that increased education accounts for 23 percent of the average annual national growth rate of 2.93 percent from 1929 to 1957.[14] Another 20 percent of the average growth rate is accounted for if one adds to this the proportion of the estimated rate of growth due to increased productivity in the form of the advance of knowledge, which is indirectly a product of this agent of production. In total, nearly one-half of all national growth is attributed directly and indirectly to human resources by Denison. By way of contrast, Denison estimates that increased capital inputs account for only 15 percent of national growth. Certainly these are compelling reasons for a manpower focal point in regional growth analysis--quite aside from the welfare implications which also inhere in this perspective.

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[13] See Roy F. Harrod, "An Essay in Dynamic Theory," The Economic Journal (March, 1939), pp. 14-37.

[14] See Denison, The Sources of Economic Growth . . . , pp. 266-69. The reader should also consult others who dispute and minimize these findings. See, for example, the excellent collection of papers in The Residual Factor and Economic Growth, Organization for Economic Co-operation and Development, A Report by the Study Group in the Economics of Education (Paris, 1964).

Elements in the process of regional growth. There are, of course, numerous other inputs and circumstances required to obtain economic growth which are frequently discussed and apply to geographic areas of most sizes in varying degrees. What is distinctive about regional growth compared to growth at the national level is the relatively greater importance which appends to the process of economic change for the smaller and almost invariably more specialized or "open" regional economy.

Regional growth and continued economic development require that an area economy become integrated into the larger and more important external markets in its immediate environment and relate itself in a critical manner to dominant trends at the national level.[15] Successful economic development in the past implies that the region was able to structure this type of economy, which then possesses inherent growth potential for the future. If a region has not grown as rapidly as the nation, this suggests that the nation, or the host economy, is changing in such a way that the assets which characterize the regional economy have become relatively less important to the host economy. In other words, the growth endowment and economic structure of the region is not an essential portion of the nation's pattern of growth.[16] Evaluation and analysis of a regional economy therefore requires that stress be put upon interaction patterns at the regional and national levels with the passage of time.

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[15] Douglass North, "Agriculture in Regional Economic Growth," Journal of Farm Economics (December, 1959), p. 951; and Stephen L. McDonald, Growth and Fluctuations in the Economy of Louisiana (Baton Rouge: Louisiana State University, 1961), pp. 13-14.

The host-subject economy structural relationships and integration enumerated above in general terms can be disaggregated into at least three relatively specific properties of the process of regional growth, each of which may be of greater importance to regional economic viability than to the growth of national economies.

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[16] The fact that a region's asset endowment is of decreasing significance to the host economy does not necessarily mean that the region is acting as a "drag" on the national growth pattern. Nebraska, for example, may make a contribution to national growth by supplying labor resources to other sections of the economy as residents of the state take advantage of external economic opportunities. It is in this sense, too, that the regional perspective to economic growth can contribute to a more viable national economy. Economic growth in the national economy has been observed to relate to ". . . the composition of the growth, industrially and geographically; the rate of technological change, its nature and location; population growth and its location; and social and demographic trends generally." U.S. Department of Labor, Office of Manpower, Automation and Training, Manpower Research and Training (Washington: Government Printing Office, 1965), p. 90. Denison also noted the importance of regional analysis in remarking that: "The insights the present study could provide would be magnified if it could have paralleled the calculations that I shall offer for the country as a whole with similar calculations for each region." Denison, The Source of Economic Growth . . . , p. 11. For further consideration of the importance of regional analyses see Walter Isard, "The Value of the Regional Approach in Economic Analysis," Regional Income, Vol. 21 of Studies in Income and Wealth (Princeton: National Bureau of Economic Research, 1957).

These properties are: (1) the nature of export-import relations in relatively more "open" economies; (2) the proliferation of linked industry relations or inter-industry ties, also a product of greater relative specialization; and (3) tendencies towards agglomeration, a collective dimension to human capital formation. Each of these is in need of elaboration.[17]

Imports and the "export base." Perhaps the most widely accepted "school of thought" in regional economic growth alleges that growth is best explained by the export base construct.[18] Export markets (i.e., those markets external to the region--the subject economy) are viewed as being the major support for and source of internal regional growth and development. It is observed in this framework that production for final demand sectors which are external to the area economy results in an expansion of economic activities of an ancillary and a service nature within the area. Therefore, such production constitutes the basic growth stimulus for an area.

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[17] The summary and the synthesis of the regional growth complex developed in subsequent pages draws liberally from innumerable sources. Assignment of credit for authorship would require an extensive review of the history of doctrine in this field of thought. The most appropriate sources to cite for bibliographic credit are Walter Isard, et al., Methods of Regional Analysis: An Introduction to Regional Science (Cambridge: The M.I.T. Press, 1960); W. W. Rostow, The Process of Economic Growth (2nd ed.; New York: Norton and Co., 1962); Harvey S. Perloff, et al., Regions, Resources and Economic Growth, Resources for the Future, Inc. (Baltimore: The Johns Hopkins Press, 1960); and H. J. Bruton, et al., Theories of Economic Growth (New York: The Free Press of Glencoe, 1960).

[18] The principle is applicable, but usually of far less importance to national economies. See, for example, Charles M. Tiebout, The Community Economic Base Study, Supplementary Paper No. 16 (New York: Committee for Economic Development, 1962), p. 13; James N. Tattersall, "Exports and Economic Growth: The Pacific Northwest 1880 to 1960," Papers and Proceedings, Regional Science Association, Vol. IX, 1962, pp. 215-34; and the series of articles (10) of Richard B. Andrews which appeared originally in Land Economics in the mid-1950's and are reprinted along with other important contributions in Ralph W. Pfouts, ed., The Techniques of Urban Economic Analysis (Trenton, New Jersey: Chandler-Davis Co., 1960).

Income generated by production for export markets can induce internal growth and development in a wide range of ancillary input activities. This process is analogous to the concept of "economic transformation" which Professor Kindleberger, for example, has argued is at the core of the process of economic development at a more aggregative level.[19] Essentially, development of the export-oriented base of any economy is a critical step towards attainment of a growth-widening economic environment.[20] The servicing of export markets thus can result in an expansion of local economic activities through a multiplier process not unlike the familiar foreign-trade multiplier.

Certainly, the expansion of export industries is one force at the core of regional growth, and it is of particular analytical value to recognize this because it reinforces the importance of the structural ties a region has with a broader based host economy noted earlier. The export base theory of regional growth is not complete, however, Other analysts champion the local service sector, and some go so far as to argue that ". . . it is the local service sector which is basic and enduring, and this latter sector supports the chameleon-like export sector which, taking a very long-run view, is founded on transitory manufacturing firms."[21] While it is outside the scope of this analysis to attempt to resolve this issue, it can be pointed out to be an issue of growth-initiating forces primarily. Insofar as the indirect business activity generated is concerned, either a reduction in imports or an increase in exports is beneficial to future growth and development of a regional economy.

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[19] Charles Kindleberger, Economic Development (New York: McGraw-Hill Book Co., 1958), pp. 109 ff.

[20] There are some regions which broaden what once might have been a narrow export base and there are others which fail to diversify. The latter have a greater propensity to decline as sector growth slows, in most instances, with industry maturation. Douglass C. North, "Location Theory and Regional Economic Growth," Journal of Political Economy, LXIII (June, 1955), pp. 243 ff.

Export maximization on the part of a region by no means provides assurance of economic growth, however. The proceeds from exports will not support substantial area growth if the disposition of these funds is external to the subject economy. To the extent that a region imports from another locality, there is a "leakage" from the spending stream and a reduction in the multiplier effect. Multiplier diminution, and relatively less economic growth stimulation accompany export sectors which are not allied with the broader economic structure of the region. Conversely, linked industry sectors and resource and population-oriented industries promote a relatively larger circulation of internal expenditures. Exports are the pillar to the concept of regional growth only if certain assumptions are made concerning inter-industry relations and imports within the region.

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[21] Wilbur R. Thompson, A Preface to Urban Economics, Resources for the Future, Inc. (Baltimore: The John Hopkins Press, 1965), p. 29. Thompson recognizes that circularity sets in concerning this argument as the time period is extended, although he does conclude that the demand for export products is the primary explanation for change in the short run.

Industry linkage. Optimal development of import and export relations, which tend to be of greater importance to specialized economic areas, requires that attention be paid to industry linkages. It is desirable that "satellite" industries and services be developed for the purpose of capitalizing upon the resource base, the current industry structure, and the income-stream potential of the area. Regional development can be a self-reinforcing process with proliferation of economic activity in the internal market. This is recognized at the national level where Rostow, for example, has remarked that ". . . the development of export commodities, including their transport requirements, helped induce a secondary development of domestic industry, particularly to meet the demands of new urban populations."[22]

If the future economic growth of an area is dependent upon activity interactions or inter-industry ties, there is some reason to question the merit in attracting "footloose" industries. The conclusion that there is considerable merit to attracting a "set" of industries which complement the regional structure is incontestable.[23] Another inescapable conclusion which emerges from consideration of the interrelations of regional growth is that change in the economic structure of a region is necessary to maintain economic viability. The direction of change is not assured, however, unless _no_ action is taken, in which case economic decline is inevitable.

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[22] Rostow, The Process of Economic Growth, p. 263.

Agglomeration or growth polarization. A third aspect to the regional growth process is concerned with the configuration of human and physical capital in a geographic context. Whereas the concern of the preceding pages has been spatially oriented in an industry structure context, attention now is directed to the concentration of units of economic activity; i.e., their economic and demographic configuration, commonly termed agglomeration.

Radical shifts in the stock of physical and human capital have occurred during the process of industrialization towards centers of intensive development, or "growth poles." Periphery areas about these poles often relate poorly to the more intensively developing centers of growth, and in most instances the periphery is prone to decline.[24] These again are rather widely applicable observations, applying to economies on a scale as large as global and also to the micro-scale level of the city. The agglomeration property of the process of economic growth takes on added significance in the case of the region, in that the existence of agglomeration can lead to cumulatively increasing growth disparities between regions, assuming unrestrained market forces. As a result of this agglomeration process, the periphery tends to contribute more to the center than it receives and, to the extent that the periphery is an exporter of agricultural or other primary products, the terms of exchange often favor the growth pole or center.[25]

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[23] Perloff, _et al._, _Regions, Resources, and Economic Growth_, pp. 55-62. At the same time, however, cumulative growth and development must begin someplace for relatively static economies such as Nebraska's, where the initially attracted inter-industry structure set (agriculture) is decaying.

The polarization of economic growth on a regional basis is very germane to areas experiencing rural depopulation. It is one thing to argue that current economic shifts represent a necessary adjustment process from a "national" point of view, and quite another matter when viewed from a local standpoint. In short, it is difficult to persuade areas to die gracefully, even though a natural opiate is sometimes furnished in rising per capita incomes through the depopulation of periphery areas. The increase in economic well-being which results from the net out-migration of mobile human resources to localities offering enlarged opportunities does not mean that economic efficiency is restored or attained, however. All relevant private and social costs are not necessarily reflected, and particularly non-economic and future development dimensions to these changes may be represented inadequately.

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[24] For further elaboration on these concepts see Albert O. Hirschman, The Strategy of Economic Development (New Haven: Yale University, 1958); and Gerald M. Meier and Robert E. Baldwin, Economic Development: Theory, History, Policy (New York: John Wiley and Sons, 1957). For an excellent discussion of the center-periphery concept, see John Friedmann, "Regional Economic Policy for Developing Areas," Papers and Proceedings, Regional Science Association, Vol. XI, 1963, pp. 41-63.

[25] There is an analogy between the "colonialism" of the not-too-distant past and regional polarization if spatial configurations continue unchecked, just as there are vestiges of "Mercantilism" intertwined in the export and internal development process of regional growth discussed earlier. Awareness of the disadvantages which can accrue to excessive polarization has led to consideration of balanced growth and policies which serve as a curb on geographic imbalance and regional blight. Exactly what constitutes optimal balance is hard to define, but control and policy are necessary to the extent that market mechanisms do not bring about the desired adjustments.

Rapid urbanization trends and the decline of small towns suggests the hypothesis that there is a "scale" factor to agglomeration. Optimality in size may exist in the sense that below some critical urban scale, growth is not inevitable and above that scale, absolute contraction is very unlikely. In short, there may exist a ratchet effect, or a growth mechanism which locks in past growth and tends to prevent contraction. Growth and urban scale will be affected by the nature of the hinterland of the urban place, its degree of isolation, and the general and specific patterns of industrial development, to name but a few influential variables.[26]

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[26] Also included, of course, would be the properties to the process of economic growth enumerated above (export-import relations, industry linkages, and agglomeration). See Thompson, *A Preface to Urban Economics*, p. 23 for further elaboration.

A synopsis of the regional growth process. The conventional tool kit of the economic growth theorist can be supplemented by recognizing some of the more important properties to the process of regional growth. Human capital also must be incorporated into one's concept of the theory of economic growth, both as a direct input and in its collective context of agglomeration. Changes in the stock and the rates of formation of physical and human capital both reflect and are reflected in structural changes in regional economies.

The regional growth elements and process noted above can be described in more general terms as market or input-output "access."[27] Access to markets refers to an area's comparative advantage in attaining access to inputs or outputs relative to other regions, inclusive of all factors conditioning economic growth (e.g., physical capital) as well as all growth processes (e.g., agglomeration). Access, of course, is subject to deterioration over time, to static constraints, and to forces of progress.

Figure I-2 is a schematic portrayal of the access concept. The resource endowment, inclusive of amenities; the agglomeration status of an area; the existing industry structure; and export-import

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[27] The access concept draws heavily from Perloff, *et al.*, *Regions, Resources, and Economic Growth*, pp. 87-97. Also see A. Losch, *The Economics of Location* (New Haven: Yale University Press, 1954); Isard, *et al.*, *Methods of Regional Analysis . . .* ; Michael B. Teitz, "Regional Theory and Regional Models," *Papers and Proceedings*, Regional Science Association, Vol. IX, 1962, pp. 35-50; and Kenneth E. Boulding, *Conflict and Defense: A General Theory* (New York: Harper and Row, Inc., 1963).

FIGURE I-2

MARKET ACCESS CHARACTERISTICS[a]

Access to Inputs (I)

			X+		X-	
			M+	M-	M+	M-
Access to Outputs (O)	X-	M-	b_{11}	b_{12}	b_{13}	b_{14}
		M+	b_{21}	b_{22}	b_{23}	b_{24}
	X+	M-	b_{31}	b_{32}	b_{33}	b_{34}
		M+	b_{41}	b_{42}	b_{43}	b_{44}

[a] X and M refer to external and internal (home) markets, respectively, while (+) denotes favorable and (-) unfavorable access.

Source: Adapted from Harvey Perloff, *et al.*, *Regions, Resources, and Economic Growth*, Resources for the Future, Inc. (Baltimore: John Hopkins Press, 1960), p. 91.

relations when composited, can be thought of as an area's comparative market access advantage; i.e., access to raw materials and related inputs and access to final and intermediate markets or outputs. Input-output market access is conceptually inclusive of net cost differentials related to the utilization of factor inputs and to the assembly and the distribution of outputs. Thus viewed, market access generally reflects regional economic growth potential. There might be numerous access combinations for areas, according to regional characteristics which influence the rate of growth. Optimal economic growth is also subject to manipulation or alteration through policy. Moreover, the inherent growth potential of a region is subject to a varying degree of accuracy of perception. This also can cause deviations from the optimal growth path.

Figure I-2 depicts the simplest possible combination of access characteristics for a hypothetical area. This permits the focusing of attention on a range of growth possibilities which illustrate the prospect for economic development of a region. What are, in reality, an infinite number of spatially dimensioned markets have been dimensioned into only two markets in Figure I-2. These are the external (X) and the home (M), or internal market. Second, access to markets has been dimensioned in that it is arbitrarily described as being either good (+) or poor (-) for inputs (I) and outputs (O).[28] Each (b_{ij}) depicts a given input-output access condition assumed to have a quantitative "value" for a hypothetical economy. In Figure I-2, for example, the region exhibiting the best growth potential is b_{41} in the southwestern corner of the diagram where access to outputs and inputs is positive in both the external and internal markets. Conversely, the worst regional growth potential is reflected by the value b_{14} in the upper northeastern corner. To the extent that economic development policy can alter some of the access characteristics of a regional economy, policy should be such as to direct the economy in a southwesterly direction. Agglomeration contributes to the development of growth poles; i.e., acts as a force which contributes to favorable access to inputs and outputs by affecting the internal market (M).

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[28] While none of these discrete classifications is realistic, they are necessary simplifications to the illustration of the process combinations of growth.

Some of the potential input-output combinations depicted in Figure I-2 reveal that access to inputs may restrict growth when output access is favorable (b_{24}, b_{34}, and b_{44}). In the latter instance (b_{44}), unusually good access to outputs may serve in some measure as a drawing force to the development of more readily available inputs and thus lead to correction of access imbalance and more rapid growth. The reverse situation is depicted by b_{11}, b_{21}, and b_{31}; i.e., output access is the growth constraint. Access complementarity is illustrated by b_{22}, b_{23}, b_{32}, and b_{33}, where good (poor) access in the home (external) market is offset by poor (good) access in the external (home) market.

The emphasis on structural characteristics of sources of employment and income in the regional economy which was noted in the preceding discussion of the process of economic growth has contributed to the analysis which follows in several ways. Stress has been put upon specialization patterns in an industrial and occupational basis, in order to give some rough indication of the level of development of sectors. Shifts in the structural composition of the Nebraska economy over time also are emphasized for these reasons and to assist in observing changes which are taking place in the linkage of industrial sectors in Nebraska. For reasons noted earlier, as well as the principle of agglomeration, human resource indicators of growth patterns are stressed throughout this study. The ties that a regional economy has with a broader based host economy have been recognized analytically in that much of the analysis is comparative in nature. Because the Nebraska economy is compared frequently to the nation does not necessarily mean that the two economies can or should completely resemble each other. At the same time, it is necessary to use some standard or yardstick in measuring performance and patterns of growth. The purpose of this kind of comparison is to depict market access to inputs and outputs as access is reflected in national and state rates of growth. This implies that the Nebraska economy could benefit by becoming more closely allied with the structure and patterns of economic change at the national level--an assumption that generally is reasonable. The extent to which this has occurred in Nebraska is the subject of the analyses that follow.

CHAPTER II

A PROFILE OF ECONOMIC GROWTH IN NEBRASKA

Exposure of the course of past economic development is a requisite to stimulating future economic expansion and resource utilization. The groundwork for projections and guided development in the future is laid by subjecting appropriate data to analyses. This chapter sketches the general pattern of change in Nebraska as revealed by basic economic indicators over the course of a 70-year period. This is done in order that more detailed analyses of the more current economic trends in Nebraska can be placed in appropriate perspective.

There is no reason to expect uniformity in the patterns of growth within a state or between the state and nation. Diversity is a more normal expectation.[1] Examination of indicators of regional economic growth and development (e.g., population movement or employment and income patterns) reveals some of the diversity of absolute and relative advances or declines in area economies. Comparative analysis mirrors the effect of change in the national economy as these changes translate and relate to the economic structure of regions.

Like many other states in this general area, Nebraska has experienced its development in the period since the Civil War. The development of Nebraska and the large relative rates of growth which accompanied settlement continued into the latter portion of the last century. Since 1890 far different trends have become apparent. Because relative economic stagnation is generally suspected to typify the state economy since the turn of the century, emphasis will be directed toward this problem rather than the more formative, rapid growth era from 1870 to 1890.

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[1] Numerous studies bear out this truth in an empirical framework. See, for example: James M. Henderson and Anne O. Krueger, National Growth and Economic Change in the Upper Midwest (Minneapolis: University of Minnesota Press, 1965).

Population Changes Since 1890

The movement of population since the beginning of the century has been unfavorable to the state of Nebraska as is true for most of the Midwest.[2] The percent change in population for Nebraska between decennial years from 1890 to 1960 is presented and compared to the nation in Figure II-1. The growth pattern is a rather pessimistic one relative to the nation, with no apparent improvement in sight in these data. The rate of population growth in Nebraska has ranged from one-half to one-third of the national rate.[3]

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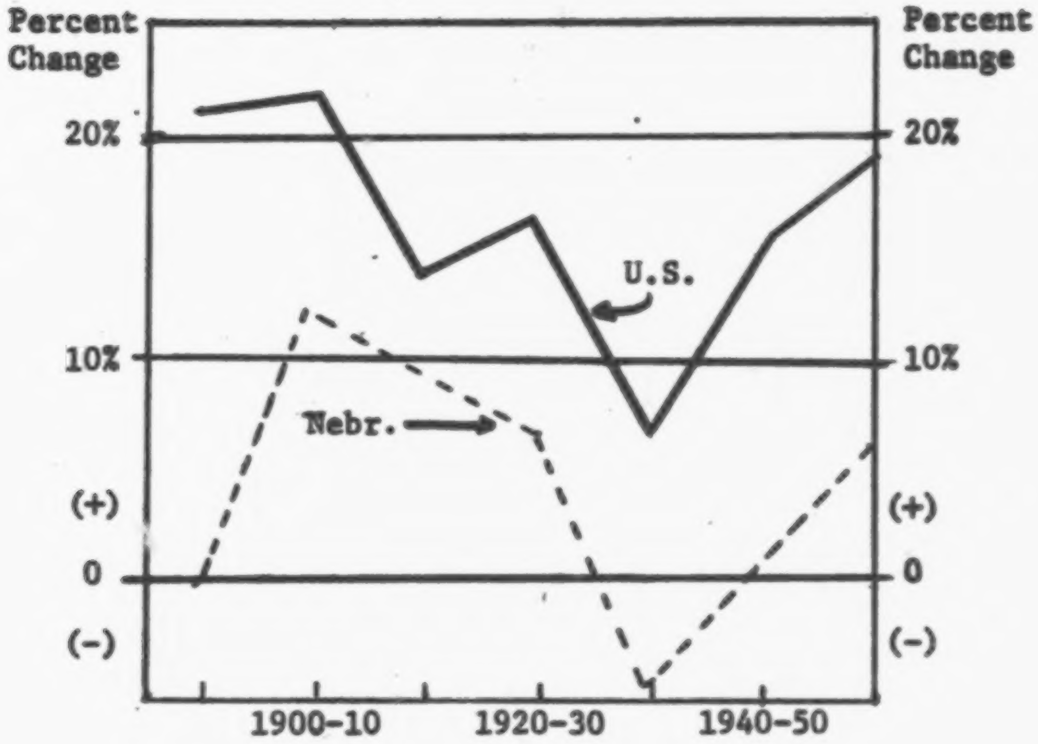
[2] The Plains States (the Lower Midwest, Minnesota, and the Dakotas) have been a major population export area since 1910. The population has increased 20.8 percent in these seven states compared to 63.8 percent for the nation over this period. Harvey S. Perloff, *et al.*, *Regions, Resources and Economic Growth*, Resources for the Future Inc. (Baltimore: John Hopkins Press, 1960), pp. 122-29 and 222-23.

[3] Similar population growth patterns are evidenced for the four-state area designated in Chapter I as the Lower Midwest, which is inclusive of Nebraska. The only state in this group which has experienced a population increase of any substance is Missouri, where the population increased from 2.7 million in 1890 to 4.3 million in 1960. For the entire Lower Midwest region, the total change in population was 3.6 million over three decades, 45 percent of which occurred in Missouri. U.S. Department of Commerce, Bureau of the Census, *Censuses of Population*: *1890 through 1960*.

FIGURE II-1

PERCENT DECENNIAL CHANGE IN POPULATION,
NEBRASKA AND THE UNITED STATES,
1890 to 1960



Source: Computed from Table A-8 of the Appendix.

The Nebraska population increased 33.3 percent since 1890 as compared to 183.6 percent for the nation. This is an annual average rate of growth of less than one-half (0.42) percent for the state. The national growth rate averaged 1.43 percent, more than three times as large as population growth for the state.[4]

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[4] Unless otherwise noted, the average annual growth rate is the compound rate of growth. The average growth rate of the Lower Midwest (0.69 percent) as a whole is slightly higher than that of Nebraska, but it is less than one-half the national rate.

Table II-1 indicates that, whereas the nation's population has increased from 62.9 in 1890 to 178.5 million persons in 1960, the population in Nebraska has increased from 1.1 to 1.4 million persons over the same period. Assuming that population growth in Nebraska had been equal to that of the nation (i.e., Nebraska's "potential" population), it would be twice as large as it is now, exceeding 3.0 million persons in contrast to 1.4 million individuals in 1960. This cumulative deficit is depicted in Table II-1 by decennial period. This differential in population growth is not primarily a product of large

TABLE II-1

TOTAL POPULATION, NEBRASKA AND THE UNITED STATES, 1890 to 1960
(thousands of persons)

Year	Nebraska	United States	Nebraska Potential[a] Total	Nebraska Potential[a] ±Actual	Percent of United States
1890	1,062	62,948			1.69
1900	1,066	75,995	1,282	- 216	1.40
1910	1,192	91,972	1,551	- 359	1.30
1920	1,296	105,710	1,782	- 486	1.23
1930	1,378	122,775	2,071	- 693	1.12
1940	1,316	131,669	2,222	- 906	1.00
1950	1,326	150,697	2,543	-1,217	0.88
1960	1,411	178,464	3,012	-1,601	0.79

[a] Potential population is the result of applying the national rate of growth since 1890 to the 1890 decennial value for the Nebraska data.

Source: Table A-8 of the Appendix.

immigration to the nation or settlement of the West near the turn of the century, as Table II-1 indicates. Rather, the "growth gap" is evenly spread in a relative sense over these 70 years.

For example, the growth gap differential since 1940 is 695,000 persons, approximately one-half of the 1960 population. The Nebraska population as a percent of the nation has decreased in every decade of this century, from 1.7 percent in 1890 to 0.8 percent in 1960.[5] This declining population trend is symptomatic of the development problems which plague an area such as Nebraska. Nebraska's population position has also deteriorated with respect to contiguous states which can hardly be described as having exhibited viable population patterns.[6]

Urbanization trends. A study of regional population change cannot afford to overlook changing urbanization patterns,". . . for there is undoubtedly a close connection between industrialization and urbanization."[7] Urbanization is the result of some combination of

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[5] A similar pattern is evidenced in the Lower Midwest states, although it is somewhat less severe. In 1890 the Lower Midwest contained 11.3 percent of the national population compared to 6.0 percent in 1960.

[6] This conclusion derives from the higher average population growth rate noted earlier for the Lower Midwest and the fact that Nebraska contained approximately 15 percent of the population of this region in 1890 as compared to 13 percent in 1960.

[7] Hope T. Eldridge and Dorothy S. Thomas, Demographic Analyses and Interrelations, Vol. III of Population Redistribution and Economic Growth (Philadelphia: American Philosophical Society, 1964), p. 193.

three forces: natural population increases, migration, and absorbing previously rural segments of society into urban centers by transformation of the area. Table II-2 indicates the urbanization patterns in the Nebraska economy since 1890. The proportion of the state population classified as urban has lagged behind the national urbanization ratio for these seven decades, although vast population shifts to urban centers have occurred in Nebraska. The shift from 27.4 to 54.3 percent

TABLE II-2

PERCENT URBANIZATION, NEBRASKA AND
THE UNITED STATES,
1890 to 1960[a]

Year	Nebraska	United States	Nebraska Relative[b]
1890	27.4	35.1	.78
1900	23.7	39.7	.60
1910	26.1	45.7	.57
1920	31.3	51.2	.61
1930	35.3	56.2	.63
1940	39.1	56.5	.69
1950	45.8	59.6	.77
1950[a]	46.9[a]	64.0[a]	.73[a]
1960[a]	54.3[a]	69.9[a]	.78[a]

[a] The new definition of urban persons applies for 1950 and 1960 only. For an explanation of the 1950 census change in classification see note (b) of Table A-8 of the Appendix.

[b] The ratio of the urbanization ratio in Nebraska to the national urbanization ratio.

Source: Table A-8 of the Appendix.

of the Nebraska population residing in urban areas is part of the urbanization process which has transformed the nation in this century. It was not until 1960 that the urban population in Nebraska exceeded the rural population, whereas this point was reached by 1920 for the nation as a whole.[8] The data in Table II-2 suggest Nebraska's heavy commitment to agriculture in the early decades of this century, and the subsequent gain in rate of urbanization in the state starting with the 1930's. The last column in Table II-2 contains the "Nebraska relative," or index of urbanization. This is the ratio of urbanization in the state to the urbanization ratio for the nation. From 1900 to 1930 the Nebraska index of urbanization value was approximately .6. Since 1930 there has been a rise in this index to .78 in 1960. From 1930 to 1960, the national ratio of urbanization increased 13.7 percentage points as compared to 19.0 percentage points for Nebraska. The converse of this trend characterizes the period from 1890 to 1930. Although urbanization has proceeded more rapidly in Nebraska than in the nation in recent years, there still exists a sizable 15.6 percentage point differential between the two areas.

Migration. Population redistribution within the nation, which is implied in the differential population growth patterns examined previously, reflects variable migration rates. Such disparities in population growth as were exhibited between Nebraska and the United States are indicative, in part, of net out-migration from this area.[9] Net out-migration in Nebraska (see Table II-3) has varied from 129,000 to 154,000 persons in each of the three decennial periods since 1930, averaging nearly 142,000 persons. This stands in bold relief to an average rate of net out-migration per decennial period of approximately 58,000 persons from 1900 to 1930.[10] Nebraska net out-migration since 1930 totals 425,000, or nearly one-third of the 1960 population in the

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[8] The urbanization ratio in Nebraska has also lagged behind that of the Lower Midwest by a relatively consistent 5.0 percentage points since 1930.

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[9] Estimated net out-migration from Nebraska was obtained by the use of the forward-survival-ratio method, where survival rates were estimated from census data. Migration (M) is computed by comparing the actual population (P) in an age-sex-specific cohort group (x) at the end of a decennial period (t+10) to the population of a cohort group 10 years younger (P^{x-10}) multiplied by the national survival ratio (σ^x). That is, the estimated survivals in the cohort group ($\sigma^x P_t^{x-10}$) are subtracted from the current Nebraska population $\bar{P}_{t+10}^x$. The national survival rate is

$$\sigma^x = \frac{P_{t+10}^x}{P_t^{x-10}} .$$

Net migration in Nebraska (M) for a cohort group is:

$$M_{t+10}^x = \bar{P}_{t+10}^x - (\sigma^x \cdot P_t^{x-10}).$$

For further detail on estimating methodology, see Walter Isard, *Methods of Regional Analysis: An Introduction to Regional Science* (Cambridge: The M.I.T. Press, 1960), Chapter II. National survival ratios were used in obtaining the Nebraska estimates. This tends to understate out-migration because the older population of Nebraska has a higher survival rate than the national average. While this is only one of the defects of migration estimates, this does not mean that the data are of no value. These data do give an approximation of the magnitude and direction of population movement over this period of time. See Eldridge and Thomas, *Demographic Analyses . . .* , pp. 15-56, for a detailed explanation and complete enumeration of out-migration. Data for 1960 were estimated by the author from census data.

[10] The period 1890 to 1900 indicates an unusually large amount of net out-migration which may be related to the heavy gross in-migration (over one-half million persons) from 1870 to 1890; therefore, comparisons are made starting with 1900.

TABLE II-3

ESTIMATED NET OUT-MIGRATION FROM NEBRASKA, 1890 to 1960[a] (thousands of persons)

Year	Number of Net Out-migrants	Net Out-migration Per 100 Population[b]	Cumulative Net Out-migrants
1890-00	187	17.6	187
1900-10	38	3.4	225
1910-20	43	3.4	268
1920-30	92	6.9	360
1930-40	154	11.5	514
1940-50	142	10.8	656
1950-60	129	9.4	785

[a] Migration estimates are based upon the forward-survival-rate method.

[b] The population is the average of the two adjacent decennial values.

Source: Hope T. Eldridge and Dorothy S. Thomas, *Demographic Analyses and Interrelations*, Vol. III of *Population Redistribution and Economic Growth* (Philadelphia: American Philosophical Society, 1964), pp. 243-47; and U.S. Department of Commerce, Bureau of the Census, *Census of Population: 1960*.

state. Cumulative net out-migration since 1890 is estimated to be 785,000 persons. In each of the last three decennial periods the rate of net out-migration has ranged between 9.4 and 11.5 persons per 100 average population. While there does not appear to be a rising net out-migration trend since the sharp increase starting in the 1930's, neither is there apparent a large reduction in the net out-migration pattern which began to appear at that time.[11]

The net out-migration to which Nebraska has been subjected throughout this century has been evidenced most significantly in the younger members of the population, as would be expected. As Table II-4 indicates, the incidence of net out-migration is largely felt in the 25 to 44 year age group. Net out-migration in the 45 year-and-over age category has averaged 16.7 percent of total net out-migration in Nebraska. In contrast to this, persons aged 25 to 44 constituted nearly one-half (48.6 percent) of all net out-migrants 10 years and older between 1890 and 1960, and persons aged 15 to 44, the prime work-age group, comprised over two-thirds (69.4 percent) of all net out-migration in this period. Net out-migration incidence is illustrated poignantly when it is recognized that persons over 45 years of age in 1960 comprised 32.0 percent of the total Nebraska population, but this same age group accounted for only 17.5 percent of net out-migration in this decennial period. This population movement is part of trends in this nation during these decades. There have been strong regional forces at work inducing a redistribution of population away from the Southeast and Midwest and toward the West and Southwest.

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[11] The decline from 11.5 to 9.4 persons per 100 is favorable however. Net out-migration from the Lower Midwest has also been large, averaging close to one-half million persons in each of the seven decades since 1890. While the amount of net out-migration attributable to Nebraska varies considerably in any decennial period, the state has contributed approximately 20 percent, or one-fifth of total net out-migration from the Lower Midwest over these 70 years. The rate of net out-migration at 9.4 percent or more since 1930 also is higher for Nebraska than it is for any other state in the Lower Midwest region. For additional comparative data, see Eldridge and Thomas, Demographic Analyses . . . , p. 247.

TABLE II-4

NET MIGRATION BY AGE,
1890 to 1960[a]
(thousands of persons)

Year	Age Category					Percent of Net Out-migrants Over 45
	10-14	15-24	25-44	45-64	65+	
1890-1900	-29.2	-34.0	-65.1	-25.3	0.3	16.2
1900-1910	- 6.8	- 1.7	-13.3	- 9.2	2.2	24.3
1910-1920	- 5.1	- 2.8	-20.1	- 8.1	1.6	18.8
1920-1930	- 9.5	-16.5	-42.5	-11.8	2.2	12.3
1930-1940	-14.4	-37.3	-70.8	-16.3	-0.7	12.2
1940-1950	-11.0	-25.2	-59.9	-20.6	-6.3	21.9
1950-1960	-12.4	-21.7	-52.7	-15.3	-4.0	17.5
Percent Distribution of Total Out-migration	13.9	20.8	48.6	16.1	0.6	16.7

[a] A minus (-) indicates net out-migration.

Source: Everett S. Lee, et al., Methodological Considerations and Reference Tables, Vol. I of Population Redistribution and Economic Growth, United States: 1870-1950 (Philadelphia: American Philosophical Society, 1957), p. 169; and U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960.

Changes in Income and Output

Total income growth. Population changes reflect the response of people to divergent economic opportunities and these changes in turn help to determine future economic opportunity. Migration is an indispensable element of the growth process and the geographic redistribution of population. It was noted earlier that net outmigration approximated 10 percent of Nebraska's average population in each of the last three decades. In contrast, the average for the three contiguous Plains States of Iowa, Missouri, and Kansas was 4.5 and 5.9 percent for the decennial periods 1930 to 1940 and 1940 to 1950, respectively. The Lower Midwest average was only 6.2 and 6.5 percent during this same period.

Not every region in the country can hope to have a growing population and a growing volume of per capita income. A region may, however, enjoy a rising per capita income if decreasing access to human resources can be tolerated. For this reason, it is noteworthy to observe population and income changes in a related context in the form of per capita income patterns. Total income and per capita income are two comprehensive indicators of change in the economy of an area.

Table II-5 presents data on changes in total personal income in 1957-59 dollars for Nebraska and its size relative to the nation between 1880 and 1960. Total personal income in Nebraska exhibited a nearly four-fold increase from 1880 to 1900, rising from 198 to 746 million dollars. As was noted earlier, this was the era of initial settlement and development of the state.[12] Since that time,

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[12] Nebraska's population increased from 452,400 to 1,066,300 between 1880 and 1900. Because of this, income changes since the turn of the century have been emphasized. Unless otherwise noted, subsequent references to personal income are in terms of real income.

TABLE II-5

TOTAL PERSONAL INCOME, NEBRASKA AND THE UNITED STATES, 1880 to 1960 (millions of 1957-59 dollars)[a]

Year	Nebraska		United States		Nebraska as a Percent of the United States
	Total Income	Percent Change	Total Income	Percent Change	
1880	198		24,413		0.81
		276.7		108.1	
1900	746		50,792		1.46
		38.6		95.4	
1920	1,034		99,251		1.04
		14.5		62.1	
1940	1,184		160,905		0.74
		147.8		140.8	
1960	2,934		387,030		0.76

[a] Real dollar deflaters are: 1880 = 35.8, 1900 = 30.3, 1920 = 69.8, 1930 = 58.2, 1940 = 48.8, 1950 = 83.8, and 1960 = 103.1 percent. The price index used to deflate money income data was a combined linking of data used by Richard Esterlin (to 1920) and the BLS Consumer Price Index (1957-59 = 100). See S. Kuznets, A. Miller, and R. Esterlin, *Analyses of Economic Change*, Vol. II of *Population Redistribution and Economic Growth, 1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 143-44; and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1964*.

Source: Table A-1 of the Appendix.

however, growth in total personal income has been slow relative to the nation. Total income in Nebraska increased 38.6 percent from 1900 to 1920 and 14.5 percent from 1920 to 1940. Total personal income in Nebraska was 1.46 percent of total income in the United States in 1900 as compared to about one-half this proportion (0.76 percent) in 1960.

Over the entire 60-year period since 1900, total personal income in Nebraska has increased at a rate less than one-half that of the United States, rising by 293 percent to nearly 3 billion dollars in 1960. In contrast, the national increase was 662 percent, a rise from 50.8 to 387.0 billion dollars. This represents an average annual growth rate in real income of 2.28 percent for Nebraska as compared to 3.45 percent for the nation. These changes in personal income at the national level are impressive, but Nebraska's relative participation in this growth is unimpressive.

The rate of progress for Nebraska relative to the nation since 1940 appears encouraging at first glance. The 2.9 million dollars of total personal income for Nebraska in 1960 represents a 147.8 percent increase over 1940. This compares to a 140.8 percent increase for the nation over this same period of time. While it appears that recent growth in Nebraska income is in a rising trend, a more detailed analysis of these two decades is necessary prior to making such a generalization.[13]

There are several possible explanations for the overall substandard rate of growth in Nebraska personal income. The two most probable explanations on an a priori basis are Nebraska's heavy orientation to an employment declining industry (agriculture) and a concomitant failure by the state to participate in the development of manufacturing activities to the extent that development occurred in this sector at the national level. The data in Table II-6 are directed to this latter contention.

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[13] See Chapter IV.

TABLE II-6

VALUE ADDED AND WAGES IN MANUFACTURING IN NEBRASKA, 1889 to 1958
(millions of current dollars)

Year	Value Added from Manufacturing: Total	Value Added from Manufacturing: Percent of U.S.	Value Added from Manufacturing: Per Capita[b]	Value Added from Manufacturing: Per Capita Index[a]	Wages per Wage Earner: Amount	Wages per Wage Earner: Nebraska as a Percent of United States
1889	19.0	0.55	18	.33	466	110.0
1909	43.9	0.54	37	.42	566	111.0
1929	109.9	0.36	80	.32	1,261	97.0
1947	260.6	0.35	206	.40	2,337	92.0
1958	536.3	0.38	388	.48	4,060	96.0

[a] Nebraska per capita value added as a percent of the same value for the United States.

[b] Based upon population.

Source: Simon Kuznets, Ann Miller, and Richard Esterlin, Analyses of Economic Change, Vol. II of Population Redistribution and Economic Growth (Philadelphia: American Philosophical Society, 1960), pp. 125-31.

Value added and wages in manufacturing. The increase in value added in manufacturing in Nebraska in each interval from 1889 to 1947 ranged between 100 and 150 percent. A similar relative increase was experienced from 1947 to 1958 as value added moved from 260.6 to 536.3 million current dollars. Value added in Nebraska has declined as a percent of total value added in the nation, with most of the diminution appearing between 1909 and 1929. On the other hand, per capita value added in Nebraska has increased relative to the nation. In 1889, per capita value added was 18 current dollars in the state, about one-third the national average. This compares to 388 current dollars for 1958. In this latter period, the Nebraska per capita value added index was .48, where unity indicates equality between the state and the nation. There is little reason to become optimistic concerning economic growth, however, when it is recognized that value added in Nebraska has declined from 0.55 to 0.38 percent of the national total since 1889. The per capita increase in value added appears to be a product of Nebraska net out-migration and a more rapidly growing population at the national level in addition to increased total value added over time.

Wage differentials in manufacturing between the state and nation are relatively small, but they have contributed to the sluggish rate of growth in personal income in Nebraska in some measure. Money wages per wage earner in Nebraska in 1958 were 4,060 dollars, or 96.0 percent of the national average. In contrast, Nebraska wages per wage earner exceeded the national average around the turn of the century by approximately 10 percent. The data are not adequate enough to indicate whether this general trend from a relatively favorable to unfavorable average wage per worker is geographic or industrial, but they do indicate an "advantage turned disadvantage" for wage recipients in manufacturing in this state as time has progressed.

Income from participation in production. Some indication of the changing composition and structure of the Nebraska economy is revealed by the income data in Table II-7. Service income earned in agriculture (receipts from wages, salaries, and proprietors' income) in Nebraska was 18.5 percent of the 2.3 billion dollars in total service income in 1960, one-half the 39.9 percent earned by agriculture at the turn of the century. In contrast, the agricultural service income component was 26.7 percent of total service income in 1880 for the United States, but only 4.8 percent in 1960, a contribution

TABLE II-7

SERVICE INCOME, NEBRASKA AND
THE UNITED STATES,
1880 to 1960
(millions of 1957-59 dollars)

			Agricultural Service Income			
Year	Total Service Income[a]		Percent of Total Service Income		Per Worker	
	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.
1880	179	20,594	39.1	26.7	708	637
1900	653	42,462	39.9	20.4	1,287	756
1920	838	80,383	30.8	16.8	1,375	1,265
1940	982	128.414	25.5	8.9	1,506	1,320
1960	2,329	305,842	18.5	4.8	3,811	3,297

[a] The sum of wages and salaries and proprietors' income. This is a "proxy" measure for participation income in that other income is excluded. See the notes to Tables A-2, A-15, A-16, and A-17 of the Appendix for further detail on income components.

Source: Tables A-2 and A-13 of the Appendix.

which is one-fifth of the 1880 level. While agriculture became relatively less important to the Nebraska economy as a direct income source between 1880 and 1960, it is at the same time nearly four times more important in the income sense in Nebraska than in the nation in 1960. The data in Table II-7 also reveal how the agricultural component of total service income has grown for these two areas on a per-worker basis. Nebraska has a clear advantage on a per-agricultural-worker basis relative to the nation. In 1960, for example, agricultural service income per worker in Nebraska was 3,811 dollars, 15.5 percent greater than the national average of 3,297 dollars.[14]

Patterns of growth in per capita income. Figure II-2 relates per capita property, service, and personal income in Nebraska to the nation during the 1880 to 1960 period. Nebraska income values are expressed as a percent of national data. Per capita income in Nebraska was about three-fourths the national average in 1940, due, in part, to (1) the dramatic drop in property income around the depression period (see the dotted line), and (2) a relative decline in service income. The recovery of Nebraska per capita income from 1940 to a level more nearly equal to the national average in 1960 was reinforced

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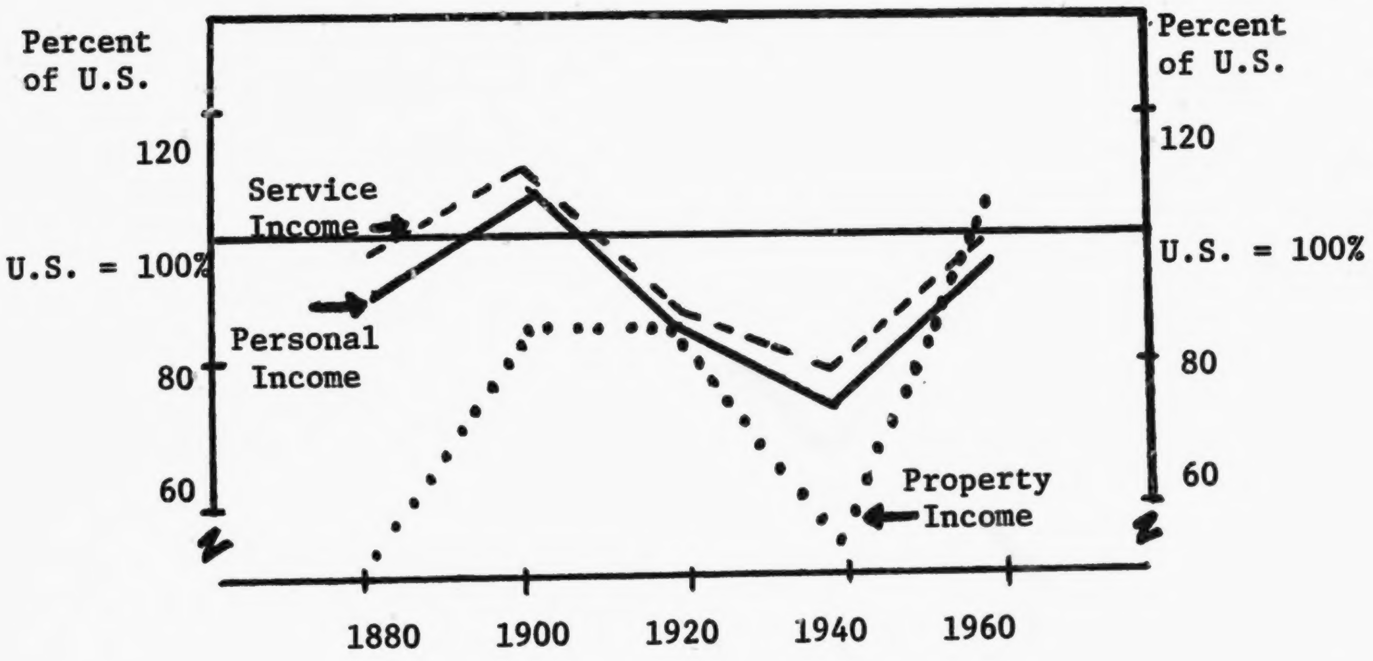
[14] At the same time, however, non-agricultural service income per worker was 32.0 percent greater than per-worker service income from agriculture in the nation, but only 11.0 percent greater in Nebraska (see Table A-2 of the Appendix). This suggests that total service income per worker in Nebraska may lag the nation (1) because of a higher-than-national proportion of the labor force participating in a low service income sector--agriculture; and (2) because non-agricultural sources of service income in the state tend to pay lower than the national average.

FIGURE II-2

NEBRASKA PER CAPITA INCOME RELATIVE TO THE UNITED STATES PER CAPITA INCOME, 1880 to 1960



Source: Tables A-1 and A-2 of the Appendix

by the increased per capita property and service income. The net out-migration in these two decades of 270,000 persons also may have contributed to the rising real per capita income in Nebraska.

Table II-8 portrays per capita income since 1880 for Nebraska and the nation. Between 1880 and 1900 Nebraska experienced an unusually large relative increase in per capita income of 60.5 percent as economic development began in Nebraska. Over the next 40 years income in the state increased 200 dollars per capita compared to

TABLE II-8

PER CAPITA INCOME, NEBRASKA AND THE UNITED STATES, 1880 to 1960

	Nebraska		United States	
Year	1957-59 Dollars	Percent Change	1957-59 Dollars	Percent Change
1880	436		489	
		60.5		37.0
1900	700		670	
		14.0		40.7
1920	798		943	
		12.8		29.3
1940	900		1,219	
		130.4		76.4
1960	2,074		2,150	

Source: Table A-1 of the Appendix and note (a) of Table II-5 for deflaters.

an increase of 550 dollars per capita for the nation. Marked progress has been made toward income convergence since 1940, thus correcting the unfavorable per capita income distribution pattern which developed between 1900 and 1940. The income level in 1900 compares unfavorably to the income level in 1940 for Nebraska, but this masks unusually high income levels in the years around 1900 and unusually low income levels in the 1930's, which extend as far as 1940 for some sectors. Since 1900, per capita income in Nebraska has increased from 700 to 2,074 dollars in 1960, growing at an annual rate of 1.83 percent. By way of comparison, the nation experienced an annual growth rate of

1.96 percent, as per capita income increased from 670 to 2,150 dollars over these six decades. The national per capita income growth rate is slightly greater than the state, whereas the rate of growth in total income for the nation (3.45 percent) was one-half again as large as Nebraska's (2.28 percent). This increase in total income has been instrumental in assuring Nebraska residents of a higher standard of living, but the population exportation which has permitted a higher per capita income is one of the major concerns in the state today. Human resources are, in a very real sense, a form of capital. Human capital, as noted in Chapter I, is strategic as an element of economic growth, as a resource supply, and as a source of demand. In addition, population patterns are critical to the regional growth process in the agglomeration sense considered earlier. For these and related reasons, some consideration of the labor force is in order.

Patterns of Growth in the Labor Force

Labor force trends. A pattern of growth similar to that noted in the consideration of population emerges when labor force data are studied.[15] In absolute terms, the Nebraska total experienced labor force has increased from 368,000 to 542,000 persons between 1890 and 1960 (see Table II-9). This is an increase of 47.3 percent over a period spanning seven decades. During this same period, the nation's labor force increased from 22.7 million to 68.0 million, an increase of 199.6 percent. This is an average decennial rate of growth for the

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[15] All data for 1940, 1950, and 1960 refer to the labor force. Prior to this, the gainful workers concept was applied. While there exists significant differences in these two concepts, they tend to cancel out in a comparative context. Also, these differences are not nearly as large as the structural changes which have emerged since 1890. For a more complete explanation of the differences in these two concepts see note (a) to Table A-4 of the Appendix.

TABLE II-9

GAINFUL WORKERS AND TOTAL EXPERIENCED LABOR FORCE, NEBRASKA AND THE UNITED STATES, 1890 to 1960[a] (thousands of persons)

Year	Nebraska			United States		
	Number	Percent Change	Percent of Population	Number	Percent Change	Percent of Population
1890	368		34.8	22,736		36.3
		1.6			27.8	
1900	374		35.1	29,073		38.3
		17.9			31.3	
1910	441		37.0	38,167		41.5
		3.6			9.0	
1920	457		35.3	41,614		39.4
		10.9			17.3	
1930	507		36.8	48,830		39.8
		-8.7			1.6	
1940	463		35.2	49,625		37.7
		14.0			21.4	
1950	528		39.9	60,200		40.0
		2.7			12.9	
1960	542		38.4	67,990		38.1

[a] Strict comparability does not exist because data for 1890 to 1930 are based on the gainful worker concept and data for 1960 exclude workers under 10 years of age (0.6 percent in 1950). The 1940 figure excludes public relief workers.

Source: Tables A-6 and A-8 of the Appendix.

nation which is more than four times as large as the increase for the state. Nebraska and the nation have moved in similar patterns with respect to the proportion of the population in the labor force, although the state had a lower proportion of its population employed until the last two decades. The labor force in Nebraska increased from an average of 35 percent of the population at the beginning of the century (1880 to 1900) to 38.4 percent in 1950 to 1960, an increase of 3.6 percentage points in participation. The increase at the national level during the same time period was about two-thirds this amount, or 2.0 percentage points.

There appears to be an ever-increasing growth gap in the Nebraska labor force relative to the nation in recent years (see Table II-9). In the most recent decennial period the nation's labor force has grown approximately four times as rapidly as the labor force in the state. Actually, the male labor force of the United States has increased from 39.9 to 47.5 million persons, an increase of 7.6 million or 19.0 percent since 1940. The total male labor force in Nebraska has decreased from a 1940 high in excess of 400,000 to 388,000 in 1960, a decline of 3.1 percent.[16] All of the growth in the Nebraska labor force which has occurred in the last two decades is due to increased participation on the part of the female labor force.

Age characteristics of the labor force. The male proportion of the labor force has undergone dramatic changes since 1900 in

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[16] See Tables A-4 and A-5 of the Appendix.

Nebraska as well as in the United States (see Table II-10). The changes since 1930 have been similar for both the state and the nation, although Nebraska's labor force was comprised historically of a larger share of males relative to the nation. This differential has narrowed considerably with the passage of time. From 1900 to 1930 the male proportion of the Nebraska labor force declined from 87.5 to 82.3 percent and from 81.9 to 78.0 percent in the nation. At the national level, the male proportion of the labor force dropped by 10.1 percentage points between 1930 and 1960, moving from 78.0 to 67.9 percent of the total experienced labor force. The changes in the Nebraska labor force were in a similar direction but of a greater magnitude, with the male component of the labor force moving from 82.3 to 69.7 percent of the total labor force, a 12.6 percentage point decline from 1930 to 1960. Over the entire period the male labor force in Nebraska declined 17.8 percentage points in comparison to 14.0 percentage points for the nation.

Table II-10 also indicates that the age structure of the labor force has changed substantially: (1) an overall aging common to both the state and the nation has taken place; and (2) a relative aging exists at the state level. There has been a substantial aging of the labor force over this period of time, no doubt because of changing health and education patterns. In 1900, for example, 29.4 percent of the Nebraska labor force was in the 14 to 24 age category as compared to 18.4 percent in 1960. These changes in labor force composition are summarized over the 1900 to 1960 period in the last

TABLE II-10

DISTRIBUTION OF THE TOTAL LABOR FORCE, BY AGE AND SEX, NEBRASKA AND THE UNITED STATES, 1890 to 1960

(percent)

	1900		1930		1960		Percentage Points ±1900	
	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.
Percent Male	87.5	81.9	82.3	78.0	69.7	67.9	-17.8	-14.0
Age Group								
14-24	29.4	30.6	23.3	23.9	18.4	17.2	-11.0	-13.4
25-44	46.1	44.3	45.9	45.9	40.0	44.7	- 6.1	0.4
45-64	20.9	20.5	26.0	25.6	34.4	33.6	13.5	13.1
65+	3.4	4.3	4.7	4.5	7.2	4.5	3.8	0.2
Age Relative[a]								
14-24	.96		.97		1.07		.11	
25-44	1.04		1.00		.89		-.15	
45-64	1.02		1.02		1.02		.00	
65+	.79		1.04		1.60		.81	

[a] The ratio of the value (percent distribution) for the state to the national value.

Source: Table A-11 of the Appendix.

column of Table II-10. There has been a relatively large and serious reduction in the 25 to 44 age category of the Nebraska labor force of 6.1 percentage points since 1900, while the nation maintained about the same proportionate share in this category. This is suggestive of the age-incidence of out-migration. Both the nation and the state experienced a sharp rise in the proportion of the labor force between the ages of 45 and 64 years of age, from approximately 21 to 34 percent of the labor force.

Another difference in the age composition of the labor force is the relatively large change in the proportion of the Nebraska labor force aged 65 and over, from 3.4 percent of the labor force in 1900 to 7.2 percent in 1960. Comparatively, this age category maintained its share at the national level at about 4.5 percent. This relative aging in Nebraska may reflect the advanced age in farm employment in the state and the greater migratory tendencies of younger age groups due to farm consolidation and the lack of employment opportunities. Relative age structures are placed in a sharper comparative relief by means of observing the ratio of the Nebraska labor force to the national labor force in each of these four age groups. These data are presented as the age "relative" in Table II-10. The position of Nebraska in the prime age group of 25 to 44 years has declined from 1.04 to .89 relative to the national average over this 60-year period. In contrast, the Nebraska labor force over 65 has increased from .79 in 1900 to 1.60 in 1960, indicating that a much greater proportion of the labor force in Nebraska is drawn from this age category than was true in 1900 and than is true compared to the nation. Comparison of the age relative factor of Table II-10 indicates that the labor force in the state is over-represented by the 14 to 24 and 65-and-over age groups and under-represented by the prime-working age group of 25 to 44 years, a direct reversal of the comparative posture of the state in 1900.

Labor force participation patterns. The labor force participation rate of the Nebraska population has changed markedly by specific age and sex categories from 1890 to 1960.[17] The overall participation rate of the male labor force in Nebraska declined from 76.2 to 71.5 percent of the population over 10 years of age between 1890 and 1960. For the nation as a whole it declined much more, moving from a participation rate which was slightly larger than the state average in 1890 (77.3 percent) to 69.3 percent in 1960, a smaller rate than exists in Nebraska. The participation pattern of females has increased rapidly since 1940 in Nebraska, moving from 18.5 to 30.1 percent during the two decades preceding 1960. This is a rise of 11.6 percentage points in the rate of female participation over a 20-year period in contrast to a much smaller rate of increased participation at the national level of 6.2 percentage points over the same period. The participation rate for women in Nebraska, which has been substantially less than the national average historically, has gained gradually on the national rate over this latter period in all age categories.[18] This differential may reflect some of the differences in the economic structure of the two areas, in that fewer suitable employment opportunities might exist for women in agriculturally oriented areas. The narrowing differential also reflects the fact that urbanization and a more mobile society has put more women in the range of job opportunities.[19]

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[17] See Table A-12 of the Appendix for the details of these data.

Another pattern of interest is evidenced in the 16 to 24 age category. From 1890 to 1930 the rate of participation in this age category for Nebraska males was 3 to 7 percentage points lower than in the nation. Since then, this differential has been reversed, and in the last decennial period the rate of participation in Nebraska for males aged 16 to 24 was 4.3 percentage points greater than the national average of 68.4 percent. This too may reflect the influence of agriculture as male youth work part-time on the farm.

These differentials and trends are summarized in Table II-11. The overall decline in participation rates for Nebraska males of 3.4 percentage points is less than one-half of the decline in participation in the nation.[20] This is reflected in the lower participation

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[18] In 1900 and 1930, for example, the Nebraska participation rate for women was two-thirds to three-fourths of the national average. This differential closed somewhat abruptly between 1930 and 1960.

[19] This may also represent an explanation for the lower average proportion of the total population in the labor force in Nebraska until 1940 which was indicated earlier. See Table III-9 and the accompanying discussion.

[20] These data used the averages of 1890 to 1900 and 1950 to 1960 for improved representativeness.

TABLE II-11

LABOR FORCE PARTICIPATION, NEBRASKA AND THE UNITED STATES, 1890 to 1960[a] (percent of population)

Age		1890-1900	1950-1960	Percentage Point Change
Nebraska				
Male:	16-24	76.8	72.2	- 4.6
	25-44	97.2	95.5	- 1.7
	45-64	94.4	91.2	- 3.2
TOTAL	(10+)	76.2	72.8	- 3.4
Female:	16-24	25.6	39.9	14.3
	25-44	10.4	30.9	20.5
	45-64	8.2	34.3	26.1
TOTAL	(10+)	12.5	27.2	14.7
United States				
Male:	16-24	81.9	68.5	-13.4
	25-44	97.0	94.0	- 3.0
	45-64	94.3	88.7	- 5.6
TOTAL	(10+)	78.4	70.9	- 7.5
Female:	16-24	30.9	38.4	7.5
	25-44	16.9	36.2	19.3
	45-64	13.3	35.3	22.0
TOTAL	(10+)	17.9	28.2	10.3
Participation Index[b]				
Male:	16-24	.94	1.05	.11
	25-44	1.00	1.02	.02
	45-64	1.00	1.03	.03
TOTAL	(10+)	.98	1.03	.05
Female:	16-24	.83	1.04	.21
	25-44	.62	.85	.23
	45-64	.62	.97	.35
TOTAL	(10+)	.70	.96	.26

[a] Persons 10 years old and over, where the participation rate is an average of the two census year values.

[b] The Nebraska participation rate as a percent of the national participation rate.

Source: Table A-12 of the Appendix.

index value in the earlier period of .98 in contrast to an index value of 1.03 toward the middle of the century. In all three categories the national rate of labor force participation declined more than the state rate for males. Similarly, the participation rate for Nebraska males exceeded the national rate in all age groups in the latter period. Were it not for this participation differential, the Nebraska labor force growth rate discussed earlier would be even smaller than it was indicated to be, and the absolute decline in the male labor force would be greater. While the Nebraska male labor force participation rate has declined _less_ rapidly for the state than the nation, the female rate of labor force participation has increased _more_ rapidly compared to the national average. This is particularly true in the 16 to 24 and 45 to 64 year age groups. As a result of this pattern, the overall female participation rate for Nebraska has very nearly caught up with the national average rate of 28.2 percent for 1950 to 1960. The state participation rate relative to the national participation rate for females has increased from .70 to .96 over this period.

The agricultural labor force. Table II-12 reveals several characteristics of the Nebraska labor force which are very different from trends in the labor force at the national level. The failure of the Nebraska labor force to grow as rapidly as the national average is pointedly illustrated by the data in the first column, where the labor force in Nebraska is depicted as having declined from 1.62 to 0.80 percent of the nation's labor force. This development occurred in spite of the addition of 173,900 persons to the Nebraska labor

TABLE II-12

CHARACTERISTICS OF THE NEBRASKA LABOR FORCE, 1890 to 1960[a]

(thousands of persons)

Year	Nebraska Labor Force as a Percent of United States	Number in Agriculture	Percent in Agriculture	Agricultural Relative[b]	Percent of Nation's Agricultural Workers
1890	1.62	184	50.0	1.23	1.99
1900	1.29	201	53.8	1.39	1.78
1910	1.16	203	45.9	1.41	1.63
1920	1.10	187	40.9	1.60	1.75
1930	1.04	197	38.9	1.82	1.88
1940	0.95	166	35.8	2.05	1.91
1950	0.88	151	28.6	2.47	2.17
1960	0.80	113	20.8	3.20	2.56

[a] Except for 1960, these data include workers 10 years old and over. Data for 1890 to 1930 are based upon the gainful worker concept. Subsequent data are based upon the labor force concept.

[b] The ratio of the percent of Nebraska employment in agriculture to the same value for the nation.

Source: Table A-6 of the Appendix.

force in the 1890 to 1960 period. The declining trend has continued in the latter two decennial periods, averaging approximately a 0.1 percentage point decline in each census period since 1900 with some consistency.

The number of persons engaged in agriculture in Nebraska has declined from 184,000 persons in 1890 to 113,000 in 1960. The agricultural labor force reached a peak in 1910 at 203,000 persons, leveled off at slightly less than this amount until 1930, and has declined by some 84,000 workers since that time. The percent of the labor force engaged in agriculture has also declined, from approximately one-half of the Nebraska labor force at the turn of the century to 20.8 percent in 1960. The state has not moved out of agriculture nearly as rapidly as have other regions of the nation, a fact indicated by the agricultural relative which depicts the percent of the Nebraska labor force in agriculture relative to the United States. In 1900 the Nebraska agricultural labor force was 1.4 times more specialized than the nation, but in 1960 the proportion of Nebraska's labor force devoted to agriculture was more than three times as large as the national average. At the beginning of the century (1900), Nebraska had 1.78 percent of the nation's agricultural workers, and by 1960 the state's proportion of agricultural workers had increased to 2.56 percent. Most of this relative increase in agricultural employment in Nebraska came about in the last decennial period. These tendencies reflect an employment mix in the state which has not kept abreast of dominant national trends.

Long-term Shifts in Economic Activities

Specialization. Changing specialization patterns in the structure of the Nebraska economy and shifts in the relative importance of economic sectors relate directly to several of the trends and developments analyzed above. These changes in the economic structure of the state and nation and their impact on the Nebraska economy can be best comprehended by observing the broad industry pattern of change. Table II-13 divides the labor force into four very general categories. The primary industry group consists of resource-oriented activities such as agriculture, mining, fishing, and forestry; the secondary industries are process-oriented, including manufacturing and construction industries. Tertiary activities, essentially commercial in nature, are here defined as trade, transportation, and finance. All other industries, largely services and public administration, are classified as quaternary industries.[21]

The Nebraska labor force increased very rapidly relative to the nation from 1880 to 1900 as the state was being settled. Since the turn of the century, growth in the Nebraska labor force has been much less spectacular as was observed earlier. Tertiary (commerce-oriented) industries were the most rapidly growing sectors from 1880 to 1900 in

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[21] This categorization is a departure from the convention of including services in the tertiary industry group. The reasoning behind this departure relates to (1) the increasing importance of service industries and (2) the disproportionate relative size importance of the tertiary class in this state if the conventional form is followed. The terms industry and sector are used interchangeably throughout this study.

TABLE II-13

DISTRIBUTION OF THE EXPERIENCED CIVILIAN LABOR FORCE BY INDUSTRY LEVEL, NEBRASKA AND THE UNITED STATES, 1880 to 1960[a]

Industry Type	1880	1900	1940	1950	1960
Nebraska:					
Primary	98.8	201.8	166.8	151.8	115.3
Secondary	14.5	37.4	54.7	82.0	101.4
Tertiary	19.7	74.1	129.3	163.8	172.9
Quaternary	19.6	60.7	112.1	128.9	152.6
TOTAL	152.6	374.0	462.9	526.4	542.0
United States:					
Primary	8,966.2	12,135.3	9,753.7	7,931.6	5,233.1
Secondary	3,308.3	6,016.8	14,249.1	18,931.1	22,838.2
Tertiary	2,452.6	5,642.9	13,001.6	17,400.4	19,744.6
Quaternary	2,665.0	5,278.2	12,488.1	15,718.2	20,174.3
TOTAL	17,392.1	29,073.2	49,492.6	58,981.3	67,990.0

[a] In thousands of gainful workers (1880 and 1900) and experienced civilian labor force (1940 to 1960). Totals may not add due to rounding. For additional comments on labor force concepts see the notes to Table A-7 of the Appendix.

Source: Table A-7 of the Appendix.

terms of increased employment for Nebraska, nearly quadrupling to 74,100 workers while the nation experienced a two-fold increase over this period. By 1900 this industry group represented one-fifth of the labor force. Quaternary (service) industries were the next most rapid growth industries in this era, as employment tripled to 60,700 out of a total of

374,000 persons in the Nebraska labor force in 1900. The secondary or process industries were next in terms of relative growth, and these also were least important in terms of absolute size, rising from 14,500 to 37,400 workers by 1900. The bulk of the Nebraska labor force, like the nation, was in the resource-oriented industry group. In Nebraska, there were 201,800 workers associated with resource or primary production industries in 1900, most of them in agriculture. This represents more than a two-fold increase over the 98,000 workers in primary industries in 1880.

Since 1900, the Nebraska growth pattern by industry sector has been just as different from the nation as has growth in total employment. The labor force employed in the primary sector declined 17.4 percent in Nebraska from 1900 to 1940 and 19.6 percent for the nation. In the next two decennial periods the decline in the primary labor force was nearly equal by way of state and national comparison, decreasing to 115,300 persons in Nebraska by 1960. Secondary or process industries expanded three times as rapidly in the nation as they did in Nebraska from 1900 to 1940, as the Nebraska labor force employed in this sector increased 46.3 percent to 54,700 in 1940. Since 1940, the labor force in secondary industries has expanded to 101,400 in Nebraska, an increase of 85.3 percent over 1940 as compared to an increase of 60.3 percent for the nation during this same 20-year period. The labor force employed in tertiary industries totaled 129,300 in 1940, or 1.7 times the 1900 level in Nebraska as compared to 2.3 times the 1900 level for the nation. Since 1940, employment in these industries has continued to grow slowly relative to the nation, increasing to 172,900 in 1960, a 37.7 percent rise. The labor force employed in quaternary industries increased to 112,100 by 1940, a rise of 84.7 percent from 1900 in Nebraska. From 1940 to 1960, these industries have expanded to 152,600 workers, an increase of 36.1 percent in this 20-year period. In both periods, however, the national rate of growth in these sectors was nearly twice as large as it was for Nebraska.

These trends and structural changes can be brought into sharper focus by considering the Nebraska economy in more industry and analytical detail as in done in Table II-14. Also, additional insights into the nature of the Nebraska economy can be gained through the manipulation of data. The first four columns of Table II-14 contain data on the percent distribution of the labor force by industry in Nebraska over the 80-year period, 1880 to 1960. The labor force (n) in each industry (i) of the state, or any area (j) for a given point in time (t) may be represented as $(n^j_{i,t})$. This simply is expressed as a fraction of total employment, $\sum_{i=1}^{n} n^j_{i,t}$. For employment in Nebraska agriculture in 1960 this is $\frac{113.0}{542.0}$, or 20.8 percent of the labor force.

The second four columns contain the location quotient for each industry (L_q), which in general form is

$$L_q = \frac{n^j_{i,t} \div \sum_{i=1}^{n} n^j_{i,t}}{n^b_{i,t} \div \sum_{i=1}^{n} n^b_{i,t}},$$

TABLE II-14

EXPERIENCED CIVILIAN LABOR FORCE DISTRIBUTION IN NEBRASKA AND INDUSTRY LOCATION QUOTIENTS, 1880 to 1960[a]

(percent)

Industry	Percent Distribution of Labor Force in Each Sector				Location Quotient			
	1880	1900	1940	1960	1880	1900	1940	1960
Agriculture	64.6	53.8	35.8	20.8	1.31	1.39	2.05	3.20
Mining, Forestry & Fishing	0.1	0.1	0.2	0.4	.05	.04	.10	.30
Construction	5.2	4.7	4.9	6.4	.94	.77	.88	1.01
Manufacturing	4.3	5.4	6.9	12.3	.32	.36	.30	.45
Transportation & Communication	5.2	6.6	7.8	8.3	1.11	1.00	1.16	1.22
Trade, Finance & Insurance	7.7	13.2	20.1	23.6	.82	1.03	1.03	1.06
Services & Public Adm.	12.8	15.8	22.2	25.5	.84	.94	.99	1.00
Private Household	3.6	4.9	3.5	2.6	.52	.72	.74	.87
Not Reported	0.1	0.5	2.0	2.7	.41	.26	.72	.64
TOTAL	100.0	100.0	100.0	100.0				

[a] Data for 1940 and 1960 are for the experienced civilian labor force whereas data for 1880 and 1900 are based upon the gainful worker concept. Totals may not add due to rounding.

Source: Table A-7 of the Appendix.

where b represents a benchmark or comparison economy, usually the nation. The ratio L_q reveals the extent to which industry significance varies between the benchmark economy (the nation) and the subject economy (Nebraska). In a comparative sense, increases in L_q for industry (i) from (t) to (t+1) indicate an increasing area reliance on that industry on the part of the subject economy relative to national trends.[22] Specialization by industry sector in the Nebraska economy relative to the nation is indicated by location quotient values greater than unity. Conversely, industrial sectors which exhibit L_q values of less than 1.0 are less than proportionately represented in the structure of the state economy. That is, the latter suggests that the area may need to import, whereas the former suggests possible exporting. The L_q value for agriculture in 1960 was 3.2, by far the largest of any industry for Nebraska at any point in time. Even though agriculture itself has declined as a source of employment from 64.6 percent of the total experienced labor force in 1880 to 20.8 percent in 1960, its relative proportion has increased dramatically. This is the result of the more rapid rate of withdrawal from this sector in the nation than in the state. The mining, forestry, and fishing sector is of relative unimportance in an absolute sense (0.4 percent of the labor force in 1960), although Nebraska is becoming more nearly like the nation. The construction industry, a static sector relative to the nation after the period of rapid growth in the latter part of the last century, has shown signs of increased relative activity between 1940 and 1960. This industry accounted for 6.4 percent of the labor force in 1960 compared to 4.9 percent 20 years earlier. The current location quotient value in construction as measured by the experienced Nebraska labor force is 1.01 as compared to .88 in 1940. This, of course, is indicative of increased self-sufficiency as well as the increased relative importance of the sector in the structure of the Nebraska labor force.

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[22] This assumes that (b) is the national economy. For further consideration of the location quotient see: Walter Isard, Methods of Regional Analysis . . ., pp. 252-57; and Charles M. Tiebout, The Community Economic Base Study (New York: Committee for Economic Development, 1962).

Manufacturing, a static growth sector in Nebraska until 1940, has grown very rapidly since this time in relation to the total Nebraska labor force. However, the nation has a greater proportion of labor employed in this sector than is true of Nebraska. The manufacturing labor force accounted for 12.3 percent of all industry affiliation in 1960 in Nebraska--almost twice the proportion of 20 years earlier. Nevertheless, manufacturing remains a significant import sector for the Nebraska economy. The proportion of the labor force in Nebraska in manufacturing activities is less than one-half (L_q = .45) the 1960 level for the nation. A very significant economic development imbalance occurred in the manufacturing sector in the six-decade period prior to 1940 in Nebraska. Throughout this era, the growth rate in the manufacturing labor force in the national economy was equal to that of the state. As a consequence, the state remained about one-third as specialized as the nation between 1880 and 1940 in manufacturing industries.

The Nebraska labor force employed in transportation and communications industries traditionally has been in excess of the national average as is indicated by the location quotient of 1.22 for 1960, for example. Although the industry is not of great absolute importance, employing only 8.3 percent of the experienced labor force in 1960, an increasing share of the labor force has been employed in this sector since the turn of the century. At that time (1900) the state and nation had an equal proportion of their labor force employed in this sector. The trade, finance, and insurance sector of the Nebraska economy contained 23.6 percent of the labor force in 1960, a significant increase since 1900, which is similar to national trends. This is indicated by the location quotient value of 1.06 in 1960 for this sector.

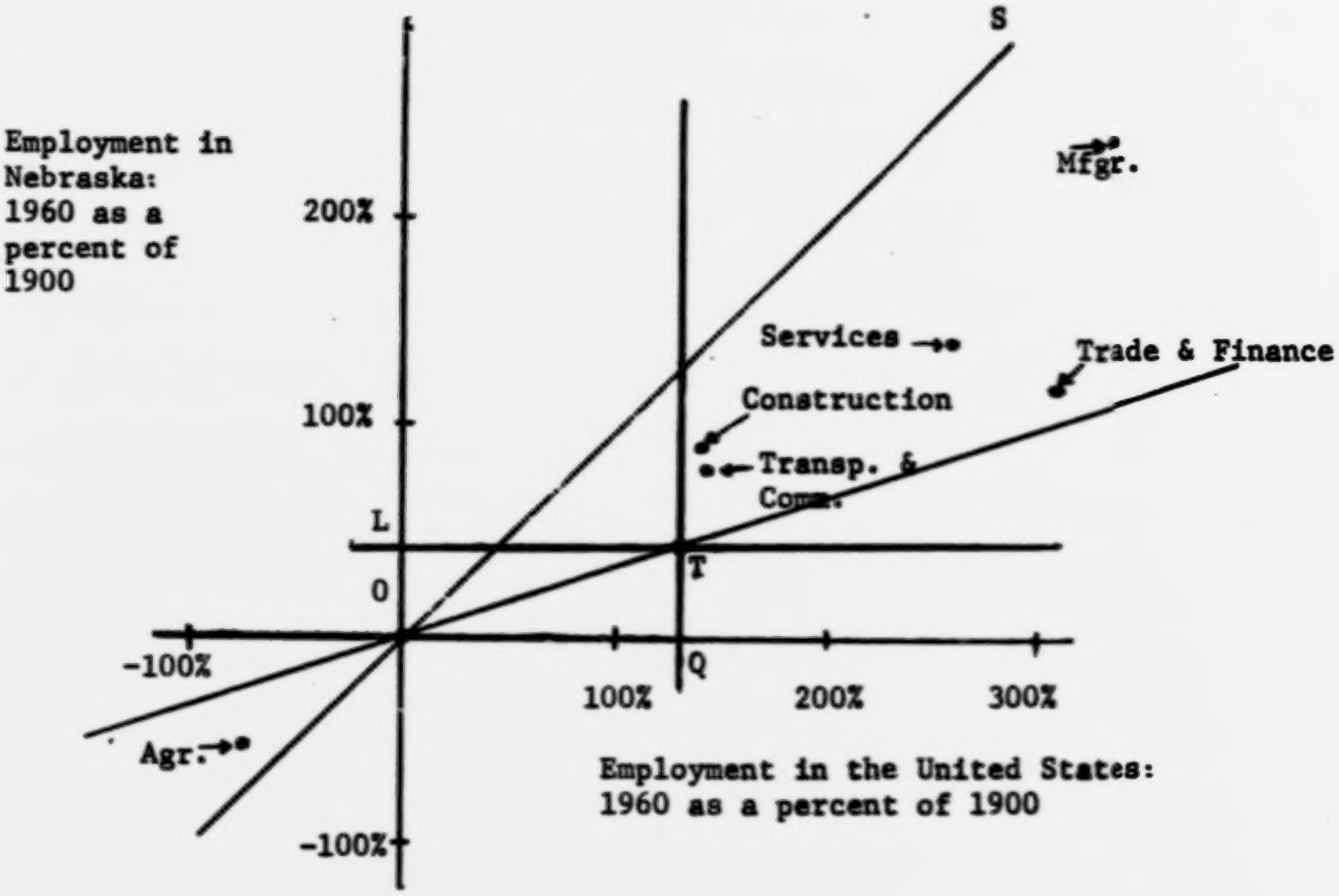
The Nebraska labor force employed in the services and public administration sectors numerically is of greater importance than any other sector and, at the same time, it is the sector which has most nearly approximated the national proportion since 1900. At the most recent decennial period, 25.5 percent of the state's labor force was engaged in this sector. This represents a relative enlargement of this sector of 9.7 percentage points since the turn of the century. The private household component of the service industries has declined less in Nebraska than for the nation. At the same time, the 1960 location quotient value of .87 suggests less specialization in this sector here than across the nation.

The preceding analyses have revealed certain aspects of industrial specialization patterns and structural changes in the Nebraska economy, but portions of the relative growth and development profile are obscured. Much of what might appear at first glance to be growth (e.g., the threefold increase in the relative size of the manufacturing labor force) may not in fact be real; i.e., it may be "pseudo" growth relative to national trends. The total labor force may be growing less rapidly in the state, or it may be declining, and a given sector might grow in proportion to the total without any absolute growth. These changing structural relations between Nebraska and the nation are brought into sharper focus by referring to a relative growth chart.

Relative growth. Figure II-3 is a relative growth presentation which is useful in the simultaneous comparison of employment growth differentials between regions and structural shifts within a region. The horizontal axis measures the percent change in employment for the nation by industry from 1900 to 1960. The vertical axis measures the percent change in Nebraska employment since 1900 on an identical industry basis. The diagonal OS is a 45-degree line that depicts equal growth. The diagonal line through O and T is a growth relative function. It is formed by the intersection of the coordinates OL and OQ respectively, and it measures the ratio of growth in the two economies. The all-industry average percentage rate of growth for the nation is OQ and the all-industry average growth rate for Nebraska is OL. The greater the slope of the line OT, the greater the rate of growth in Nebraska relative to the nation. A flatter diagonal which is below and to the right of OS, the line of equal growth (as OT in Figure II-3) indicates lower growth

FIGURE II-3

RELATIVE INDUSTRY GROWTH, NEBRASKA
AND THE UNITED STATES,
1900 to 1960



Source: Calculated from data in Table A-7 of the Appendix.

than the national average, or a growth gap, and that the state is obtaining a declining share of total employment in the system.

The diagonal OT, formed by coordinates OL and OQ, allows interesting comparisons when used in conjunction with OS, the line of equal growth. The growth of an industry in Nebraska which is represented by a point below OS is a local industry which has not grown as rapidly as the national rate of growth for that same industry. In other words, the industry evidently is at a competitive or area disadvantage in the state relative to the nation. This applies to every economic sector except agriculture in Nebraska as Figure II-3 reveals. So long as the industry growth point is above LT, the growth relative, the industry has grown more rapidly than all other economic sectors in the state. In this instance there is a favorable growth effect because of the industry mix in the state. This is also true for all industries except agriculture, where there was a decline in employment. Growth has been dominated by employment reductions of the industry mix type in agriculture, as Figure II-3 indicates. This has been the only industry to show a competitive growth advantage in Nebraska compared to the nation; i.e., it has not declined as rapidly in the state (44.9 percent) as in the nation (60.9 percent) since 1900.

The relative growth function OT graphically depicts the all-industry growth disparity between the state and nation, where the Nebraska labor force increased 44.9 percent (OL) while the national change was 133.9 percent (OQ) over this six-decade era. Those industries in which the competitive or area disadvantage effect is most severe in relative terms are located the greatest distance from OS (e.g., trade and finance). The industrial composition or mix effect is greatest for those industries which are the greatest horizontal distance from the line QT; i.e., these are the industries contributing most heavily to regional growth. There also exists a mix effect for a region in relation to the vertical distance from LT, the average rate of growth for the area economy.

Shifts in industrial sources of employment. The absolute size of these relative gains and losses between comparison economies is brought out in Table II-15. This table is derived by multiplying the comparison (national) economy's all-industry growth rate by employment in the base period of the subject (state) economy to obtain expected employment. The amount by which actual employment in the state differs from expected employment obtained by applying the national all-industry rate is the net growth gap for all industries.

Next, each industry growth rate at the national level is applied to industry employment in the state to obtain expected industry employment. Industry employment differentials are then obtained by comparing the actual change in industry employment with the expected change, and these differentials are added across all industries. This figure represents the amount by which each industry grew at a greater or lesser rate than did that same industry in the nation; therefore, it is described as a competitive or area (dis)advantage as was noted earlier.[23]

Some industries may grow more or less rapidly at the national level than the national all-industry rate of growth. Growth of an industry in excess of or less than the national aggregate rate is defined as the industry mix or composition effect and would be positive or negative. The mix effect can be determined by multiplying employment in an industry by the national aggregate rate of growth, and

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[23] An alternative way to compute this value would be to apply the difference in industry growth rates to Nebraska employment.

TABLE II-15

SHIFTS IN THE EXPERIENCED CIVILIAN LABOR FORCE IN NEBRASKA,[a]
1900 to 1960
(thousands of persons)

Industry	Labor Force 1900	Labor Force 1960	Growth Gap	Mix Effect	Area Disadvantage
Agriculture	201.4	113.0	-358.1	-392.3	34.2
Mining, Forestry & Fishing	0.4	2.1	1.2	0.6	1.0
Construction	17.7	34.5	- 7.0	1.7	- 8.7
Manufacturing	19.7	66.9	20.8	39.8	- 19.0
Transp. & Comm.	24.8	45.3	- 13.0	1.8	- 14.7
Trade, Fin. & Ins.	49.3	127.9	13.9	85.7	- 71.8
Services & Pub. Adm.	59.0	138.0	0.7	70.5	- 71.2
Other[b]	1.7	14.6	10.6	7.1	3.4
TOTAL	374.0	542.0	-332.8	-187.0	-145.9

[a] Totals may not add due to rounding. A (-) indicates a shortage or growth gap.

[b] Consists primarily of industries not reported.

Souce: Table A-7 of the Appendix.

then subtracting this value from the product of industry employment in the state times the national rate of growth for that industry.[24] The sum of the mix effect and area (dis)advantage effect will equal the net growth gap, the difference in performance between an industry in a state and the national average aggregate growth rate.[25]

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[24] Alternatively, one could obtain the growth differential of the overall and industry rates to obtain the mix effect.

This can be formally presented and illustrated in the following manner, where n represents employment. The growth gap in employment (N_g) for all industries $(\sum_{i=1}^{n} n_i)$ in region (j) in time (t+1) is:

$$N_g = \sum_{i=1}^{n} n^j_{i,t+1} - (G_b \times \sum_{i=1}^{n} n^j_{i,t}),$$

where in the nation (b) the all-industry rate of growth (G_b) is:

$$G_b = \frac{\sum_{i=1}^{n} n^b_{i,t+1} - \sum_{i=1}^{n} n^b_{i,t}}{\sum_{i=1}^{n} n^b_{i,t}}.$$

Obviously, the parallel of this calculation can be made for each industry in region (j), yielding a growth gap by sector (n_g). Consider for example, the positive growth gap in manufacturing employment for Nebraska given in Table II-15, where the overall national rate of growth (G_b) was 233.9 percent. Here employment in 1960 $(n_{i,t+1})$ was 66,900 compared to 19,700 persons in 1900 $(n_{i,t})$.

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[25] Numerous studies have employed the "shift" technique of analysis in various forms, although it is only in the last few years that the full significance of the insights that the technique permits have been appreciated. See Daniel Creamer, Industrial Location and Natural Resources (Washington: U.S. Government Printing Office, 1943); Wilbur Zelinsky, "A Method for Measuring Change in the Distribution of Manufacturing Activity: The United States, 1939-47," Economic Geography (April, 1958), pp. 95-126; and Lowell D. Ashby, Regional Change in a National Setting, Staff Working Paper in Economics and Statistics, Number 7, U.S. Department of Commerce, Office of Business Economics, Division of Regional Economics (Washington: U.S. Government Printing Office, 1964).

$$n_g \begin{aligned} &= 66.9 - (233.9 \times 19.7) \\ &= 66.9 - 46.1 \\ &= 20.8 \text{ persons} \end{aligned}$$

This growth gap is comprised of the mix effect and the area (dis)advantage effect. The area (dis)advantage effect (α) for industry (i) is:

$$\alpha_i = n^j_{i,t+1} - (g^b_i \times n^j_{i,t}),$$

where:

$$g^b_i = \frac{n^b_{i,t+1} - n^b_{i,t}}{n^b_{i,t}}.$$

As an illustration consider manufacturing employment again, which expanded by 435.8 percent from 1900 to 1960 in the nation. The area (dis)advantage for Nebraska manufacturing employment is:

$$\begin{aligned} \alpha_i &= 66.9 - (435.8 \times 19.7) \\ &= 66.9 - 85.9 \\ &= -19.0 \text{ persons} \end{aligned}$$

The 19,000 area disadvantage indicates that manufacturing employment grew less rapidly in the state than the nation. However, it is offset by the mix effect (B_i) which is:

$$B_i = (g_i^b - G^b) \times n_{i,t}^j$$

$$= (435.8 - 233.9)\ 19.7$$

$$= 201.9 \quad \times 19.7$$

$$= 39.8 \text{ persons}$$

A convenient check is afforded by adding the mix effect and area (dis)-advantage which combined should equal the growth gap. In our example for manufacturing employment:

$$n_g = \alpha_i + B_i, \text{ or}$$

$$20.8 = -19.0 + 39.8$$

This, of course, is true for all industries, just as it is for each individual industry.

The results of isolating changes in the labor force due to a region's mix of rapid or slow growth industries from changes in employment attributable to a competitive (dis)advantage are given in Table II-15. The labor force growth rate of all national industries (percent for the nation in the six-decade period ending in 1960) was applied to the total Nebraska labor force to obtain an "expected" labor force of 874,800 for 1960. This produces a negative growth gap of 332,800 persons for Nebraska. This growth deficit of approximately one-third million persons is directly related to the previously observed net out-migration of 598,000 persons in this same period, and the population growth gap of 1.6 million persons in the last six decades also observed earlier.[26]

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[26] See Table II-1 of the text.

The composition of these changes is of fundamental importance to the Nebraska economy. Analysis of Table II-15 reveals that 48.0 percent of the growth gap (145,900 persons) is related to the area or competitive disadvantage. The remainder (187,000 persons) reflects a substandard industry mix in the state with respect to broader and more rapid national economic growth trends. Nebraska's unfavorable industry mix effect is related primarily to the rapid decline in on-farm employment opportunities in agriculture. All other industry sectors exhibited a positive mix effect. The mix effect, which reveals the contribution to aggregate state growth resulting from specialization in slow or rapid employment growth sectors, is dominated by the sizable downward shift in agriculture.[27]

The competitive ability of the state economy is implicit in the area disadvantage. There has been an area advantage in only one sector, agricultural employment, where the area advantage was a small 34,200 workers.[28] Contrary to some popular thought, Nebraska's growth in trade, finance, and insurance has deviated widely from national trends, where the average decennial growth rate has been 51.0 percent. The Nebraska labor force associated with this sector expanded by

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[27] Slow and rapid growth sectors are measured against the national average for all industries; consequently, domination does exist if the time period is lengthy.

[28] That is, the decline in employment in agriculture has been less serious for Nebraska than the nation as a whole by this amount.

79,000 workers in this period for the state, but this was 71,800 less workers than the national rate of growth, the largest and a very considerable competitive disadvantage. Employment in the service industries was also less rapid in the state than in the nation, resulting in an unfavorable shift of 71,200 workers over this six-decade era. The growth deficiency in Nebraska in these two sectors of 143,000 workers accounts for nearly one-half of the total growth gap between the two economies.

Manufacturing industries also grew less rapidly over the long-run in the state of Nebraska than they did for the nation as a whole. This contributed another 19,000 to the area disadvantage shift of 145,900 workers.[29] Transportation and communications industries also failed to expand as rapidly in Nebraska as they did in the nation, contributing 14,900 to the competitive disadvantage. Moreover, growth in construction industries in the state was inferior to performance at the national level which averaged 24.0 percent each decennial period. As a result, another 8,700 workers were added to the total area disadvantage effect.

The most deficient economic sectors in a growth context in this 60-year period seem to be those sectors directly related to agriculture and those associated with the population of an area. This is consistent with the importance attached earlier to the population growth gap of 1.6 million persons and the more than one-half million persons who were estimated to have migrated out of the state since the turn of the century. Shifts in the industrial composition and growth of the labor force likewise relate to the relative stagnation of the state economy in terms of (1) a failure to participate in the process of industrialization (i.e., manufacturing) in the first half of the century when manufacturing industries were rapidly expanding at the national level, and (2) a heavy reliance on one sector--agriculture, which is the only sector in which the state has exhibited a competitive advantage but which is the only sector to supply fewer employment opportunities rather than more with the passage of time. A competitive or area advantage which is based upon declines in employment which are less than the national rate of decline is hardly a sound basis for economic growth.

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[29] In view of the large relative change in the distribution of employment revealed in previous pages, most of the gap in this sector evidently occurred prior to 1940.

Summary

Changes in the Nebraska population over the course of the last seven decades suggest sluggish economic growth and limited opportunities for area residents. The state's "share" of national population is less than one-half its 1890 level; the population growth rate in Nebraska was one-third the national rate between 1890 and 1960; and the size of this "growth gap," which shows no sign of decreasing, was a total of 1.6 million persons from 1890 to 1960, and 300,000 persons in each of the two most recent decades.

The national ratio of urbanization is over one-fourth again as large as it is in Nebraska. Net out-migration approximated 10 percent of the average population in each decennial period beginning with 1930 to 1940; the cumulative net out-migrants for these seven decades are 785,000 persons; and over four-fifths of all net out-migrants have been less than 45 years of age. These are patterns of change which cannot be permitted to persist if economic viability is to be achieved in the future. At the same time, however, they relate to several other facets of economic development of the Nebraska economy which require attention.

The national rate of growth in total real personal income from 1900 to 1960 was one-half again as large as Nebraska's growth rate, exceeding the state's average of 2.28 percent by 1.17 percentage points. The 1940 to 1960 period witnessed a state rate of growth roughly comparable to the national average in total personal income. Value added in manufacturing declined relative to the nation until 1929, and has grown at the same rate in the state as the nation since then. There has been no appreciable gain, however, in the state's relative share of total value added since the 1930's. Value added in Nebraska was 0.54 percent of total value added at the beginning of the century, it dropped to 0.36 percent by 1929 and has ranged from 0.35 to 0.38 percent since then. Agriculture's share of service income (wages, salaries, and proprietors' income) was over 400 million dollars of the 2.2 billion dollars total service income in 1960. This constitutes 18.5 percent of the total, four times as much as the agricultural share of service income at the national level. Service income earned by agriculture in 1960 was one-half of the relative amount in 1900. Nebraska per capita income was 96.0 percent of the national average in 1960, largely as a result of the widespread exportation of human capital in prior years.

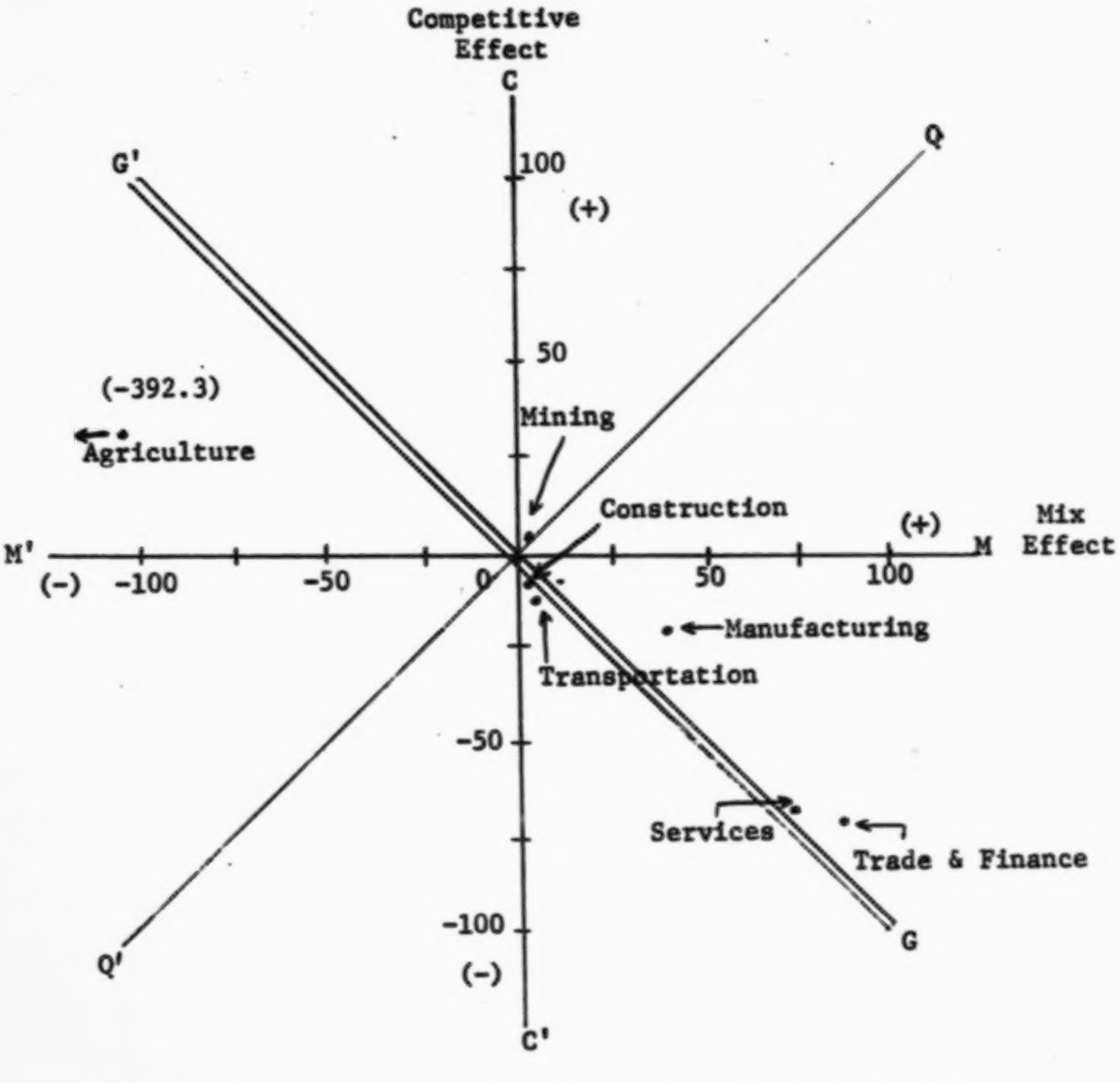
The Nebraska labor force has grown 51.4 percent since 1890, approximately one-fourth the increase experienced by the nation. There has occurred a larger increase in participation by the female labor force in Nebraska than in the nation. On the other hand, participation by the male labor force in Nebraska declined 3.4 percentage points since 1900, whereas the national decline was 7.5 percentage points. Nebraska's labor force has aged relative to the nation. Persons over retirement age comprise a greater proportion of the Nebraska labor force (7.2 in contrast to 4.5 percent for the nation). Persons between the ages of 25 and 44 accounted for 40.0 percent of the Nebraska labor force as compared to 44.7 percent for the nation in 1960. The decline in Nebraska's labor force relative to the nation has been as large and as severe in the most recent decade as it was 40 years ago. The proportion of the Nebraska labor force employed in agriculture has dropped from 50.0 to 19.9 percent over these 70 years, but the proportion of the Nebraska labor force in agriculture in 1960 was more than three times as great as the national average.

The industrial composition of the experienced labor force in Nebraska has undergone substantial changes since the turn of the century as has been true at the national level. There is not a great deal of similarity in these changes between the state and the nation, either in terms of magnitude or direction. The Nebraska labor force expanded much less rapidly than the nation as a whole. The rate of decline in primary or resource industries was roughly equivalent; however, employment increases in the secondary (process), tertiary (commerce), and quaternary (service) industries in the state lagged behind national trends. The Nebraska labor force was much more specialized in agriculture in 1960 than the nation, and less specialized in transportation and communication industries. Relative underdevelopment in Nebraska is also indicated in the manufacturing sector where a 1960 location quotient value of .45 was obtained. There was no industry sector which grew more rapidly in Nebraska than in the nation, although the agricultural sector declined less rapidly in the state than across the nation. Consequently, Nebraska agriculture exhibits a competitive advantage in comparison to national trends. At the same time, however, each economic sector in Nebraska grew at an employment rate in excess of the national average rate of growth except agriculture. The downward industry mix effect of agriculture at both the national and state level is of primary importance in explaining the total downward shift in the labor force in Nebraska; i.e., the growth gap of 332,800 workers since the turn of the century.

Figure II-4 reveals the absolute impact of the area advantage and industry mix effects diagramatically. The chart space is divided into eight octants centered at the (0) point, which is a point that indicates that the state experienced no area advantage effect

FIGURE II-4

EMPLOYMENT GROWTH OCTANT, NEBRASKA, 1900 to 1960
(thousands of persons)



Source: Lowell D. Ashby, Regional Change in a National Setting, Staff Paper No. 7, U.S. Department of Commerce, Office of Business Economics (Washington, D.C.: U.S. Government Printing Office, 1964), discusses these concepts which also were the outgrowth of discussions between the author and Dr. T. W. Roesler of the University of Nebraska.

(industry growth variance) and no industry mix effect (industry and overall growth variance) relative to the nation. Space above MM' reveals positive competitive or area advantage effects and space to the right of CC reveals positive industry mix effects. The two lines (QQ' and GG') which diagonally intersect the origin represent the locus of vector points typifying equal mix and area advantage effects. The diagonal (GG') is the growth gap function, where the locus of any industry vector point to the right of GG' depicts a positive "gap"; i.e., industry growth in the area is greater than the aggregate national rate, either because of favorable mix effects or favorable competitive effects, or both.

The Nebraska employment data analyzed above were noted to have been dominated by the mix effect. Positive mix effect dominance is illustrated in Figure II-4 where the industry vector points are concentrated in the two octants OQM and OMG. Negative mix effect dominance is illustrated by a vector point in either of the OQ'M' or OM'G' octants. Conversely, positive area advantage or competitive dominance would be depicted by a vector point in OG'C or OCQ, and OGC' or OC'Q' reflect negative area advantage dominance.

Transportation and construction, for example, exhibited growth gaps relative to the nation which were a result of an area disadvantage, although there was a slight positive mix effect. Agriculture is dominated by unfavorable mix effects and is a growth gap industry in spite of an area advantage. Mining exhibited a positive competitive effect and, since the vector point is to the right of GG', a positive growth gap. Employment in all other sectors grew less rapidly than the same sector in the nation, but they were dominated by positive mix effects which offset the area disadvantage. This offset is rather slight, and the very large area disadvantages of the service and trade sectors are also highlighted in Figure II-4.

These data provide an overview of some of the more important employment growth patterns in the Nebraska economy in the last several decades. Very significant changes in the population and in sector distribution of income and employment characterize these years. For example, agriculture is an important speciality in which the state has an area advantage. This is evidenced by the shift analysis above and the fact that service income per agricultural worker in Nebraska in 1960 was about 500 dollars higher than the national rate. At the same time, Nebraska has paid a severe income and employment growth penalty because the state has not been successful in diversifying its economic base and because of the close alliance with this primary industry which has been revolutionized by technological change. These developments and the nature of the state's economic base are worthy of more detailed analysis in a current time setting. It is to this that we now turn our attention.

CHAPTER III

INCOME GROWTH IN THE NEBRASKA ECONOMY

While an aggregative profile of economic growth over the course of this century was provided by the data analyzed in the previous chapter, the analysis glossed over much that is relevant to past economic growth and future prospects in Nebraska. This shortcoming can be corrected by a more detailed analysis of each of several indicators of economic growth in recent years. This chapter concentrates on patterns of change in income in the postwar economy. We will first suggest why and how income growth patterns are significant to a regional economy and then consider (1) growth patterns revealed by detailed income data in recent years; (2) growth shifts in sources of income; and (3) the incidence and extent of the low income problem in Nebraska.

The Context of Income Analysis

Although considerable variation may exist in regional income growth patterns, there are at the same time dominant aggregative influences from which regions and states cannot completely insulate themselves.[1] These influences permeate regions geographically and industrially to the extent that the regions parallel the nation's industry structure. When the nation as a whole surges ahead, the several regions and states of the nation tend to expand. Similarly, sluggish national growth patterns are transmitted to smaller and frequently more specialized economic units. It is most likely that these inter-industry relations will become more important rather than less important in the future. The scope of financial markets continues to broaden into the larger economic community, and technology, scientific information, and changing behavioral patterns promise to add to this economic interdependence. These trends undermine viable economies that once might have been successfully insulated from exogenous forces.

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[1] Harvey S. Perloff, et al., Regions, Resources, and Economic Growth, Resources for the Future, Inc. (Baltimore: John Hopkins Press, 1960), pp. 104-106.

This increasing economic interdependence, in concurrence with irregularity in the transmission of relative growth rates among regions which accompanies specialization, suggests that understanding the process, nature, and direction of economic change in the state economy requires comparative analysis. Still a second factor which contributes to the use of this analytical approach is apparent once it is recognized that geographic boundaries, which have become less significant to most areas' economic orientation with the passage of time, can become increasingly definitive and firm. That is, there may be erected knowingly, out of misunderstanding or out of ignorance, "pseudo" growth constraints which hinder the assimilation of an area economy into a larger and (presumably) more prosperous economic unit. It is possible that an area economy may find it desirable to destroy portions of a barrier to economic growth, or conceivably, it may be desirable to erect such a constraint barrier or boundary.[2]

This possibility lends still more credence to comparative analysis. Alteration of suspected growth-restraining forces requires an understanding of the economic circumstances peculiar to the localized economy in relation to the national economic framework. While this understanding does not assure alteration, the successful implementation of planned growth and development cannot help being positively conditioned by such knowledge.

The rate and source(s) of progress are revealed in part by growth trends in personal income, one of the most widely accepted and comprehensive indicators of growth. Both inter-industry and comparative analyses can be conducted using these data. Despite the existence of several defects in using personal income as a definitive indicator of growth in output, this measure does mirror several features of regional economies, including continuous change in technology and demand in relation to the creation of income by economic sector.[3]

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[2] The erection of some barrier may be pursued in order to properly channel economic assimilation (e.g., to achieve greater economic stability), or to speed up the destruction of another growth constraint boundary (e.g., excessive reliance on agricultural activities).

[3] One obvious defect is that personal income estimates exclude retained corporate earnings (a major segment of private income derived from current productive activities), and include certain forms of income not derived from current production such

Figure III-1 depicts the total personal income growth gap in Nebraska over the postwar period. Total personal income has increased since the late 1940's by what appears to be a considerable amount when considered alone. Using the nation as a benchmark for comparison purposes reveals far different trends, however. A sizable growth gap is depicted if the national growth rate is applied to personal income in Nebraska for years since 1948. The total cumulative gap is almost seven billion dollars of personal income--an amount equal to two years of real output in the Nebraska economy. Figure III-1 indicates that the size of this gap for 1963 (using the 1948 base) is almost 700 million dollars of personal income.

Income Growth Patterns and Trends

Growth in selected income components. The growth posture of an area is revealed in part by examining average annual rates of

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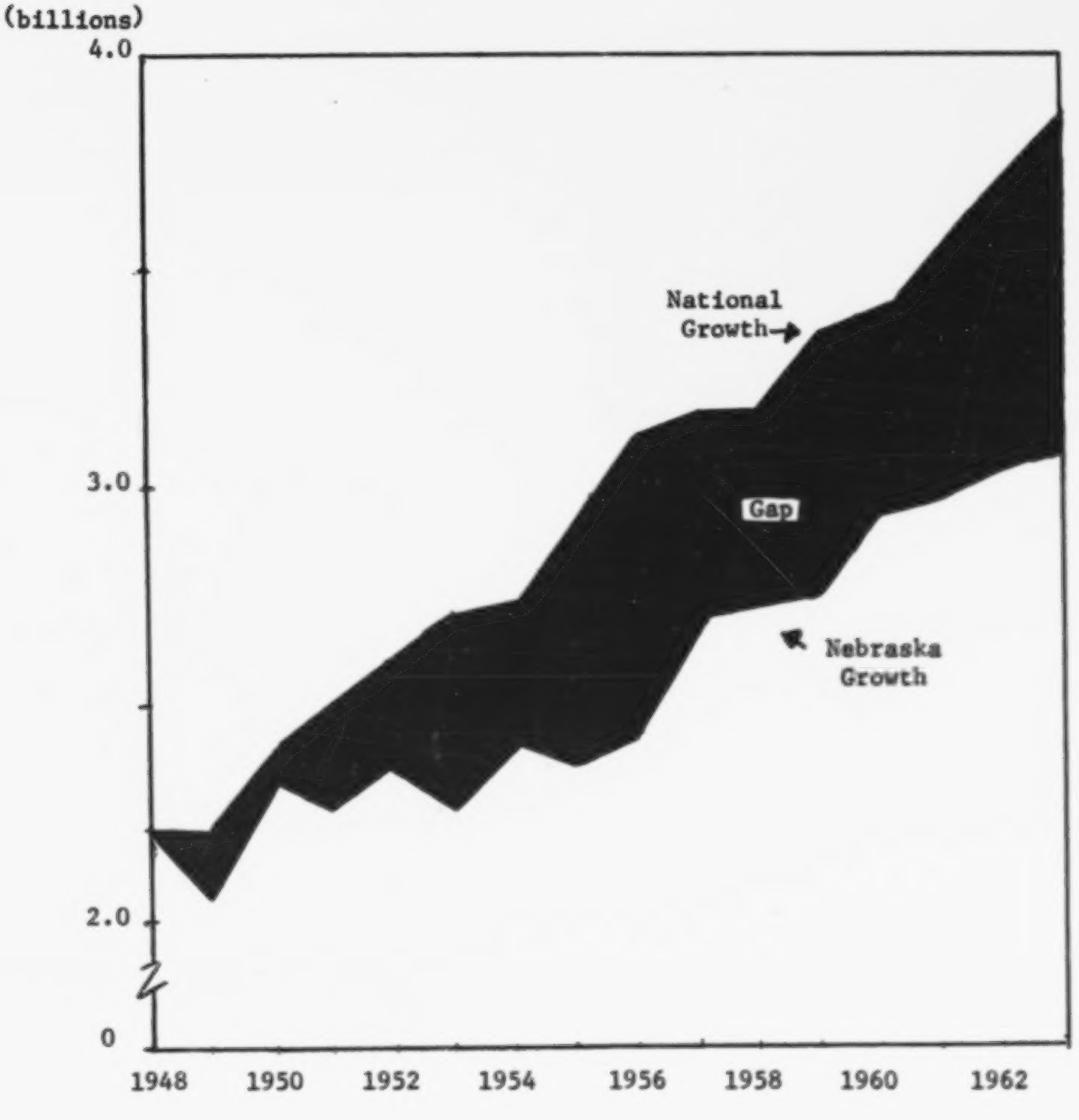
as O.A.S.I. benefits. For additional detail on the nature of the composition of personal income, see U.S. Department of Commerce, *National Income*, Supplement to the *Survey of Current Business* (Washington: U.S. Government Printing Office, 1954). A summary description is contained in Wallace C. Peterson, *Personal Income in Nebraska and Nebraska Counties: 1950-62*, University of Nebraska Bureau of Business Research Bulletin No. 71 (Lincoln: University of Nebraska, 1965), pp. 4-7.

FIGURE III-1

TOTAL PERSONAL INCOME GAP
(billions of 1957-59 dollars)



Source: Tables A-13 and A-15 of the Appendix.

growth in total real personal income and selected income components.[4] Table III-1 contains some of these data, which span the time periods 1948 to 1963 and 1958 to 1963. Real personal income in Nebraska has increased by nearly 1.0 billion dollars since 1948 to a total of 3.2 billion dollars in 1963. This represents an average annual compound rate of growth of 2.42 percent a year, a substandard increase relative to the national average. Over this same period of time, income in the nation grew at an average rate of 3.76 percent a year, a rate of growth more than one-half again as large as the state's growth rate.[5] More recently, however, Nebraska's rate of growth

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[4] Any subsequent reference to "income" refers to total real personal income unless otherwise noted. Data were adjusted by the Consumer Price Index for the nation to reflect growth in real terms. While it would have been possible to adjust Nebraska data by a state price index, this was not used because of (1) the relatively small and unimportant difference in the state and national indices, and (2) the questionable basis for and recent discontinuation of the former. See the U.S. Department of Commerce, Survey of Current Business, August, 1965, for additional detail on this index as well as income forms (e.g., disposable income) not considered in this analysis.

[5] This results, in part, from the use of 1948 as a base period. The selection of 1948 as a beginning comparison year was based upon similar cyclical patterns between the nation and state and upon comparable patterns in relation to the ending year, 1963. See R.A. Wykstra, Nebraska Economic Indicators, Bureau of Business Research, Bulletin No. 70 (Lincoln: University of Nebraska, 1965), p. 48. In addition, the availability of certain census data, the probable completion of most post-war adjustment processes, and the general income trend throughout the entire period conditioned the selection of 1948 as a comparison year. It must be recognized, however, that the selection of base years do change analyses of income growth patterns considerably when comparisons are involved. This is the case for Nebraska, in that 1948 was a high income year relative to 1947 and 1949. Therefore, differential growth rates between the nation and Nebraska are larger than they would be if either of these two years were used. However, for the reasons noted above, the use of 1948 appears to be more justifiable than the alternative years of 1947 and 1949.

TABLE III-1

GROWTH IN SELECTED INCOME MEASURES, NEBRASKA AND THE UNITED STATES, 1948, 1958, and 1963[a]

Income Components	Thousands of Real Dollars[a] 1948	1958	1963	Annual Growth Rate(%)[b] 1948-63	1958-63
Nebraska					
Total Income	2,209	2,717	3,164	2.42	3.10
Per Capita Income	1,746	1,963	2,167	1.45	2.00
Property Income	217	356	453	5.03	4.93
Wages & Salaries	974	1,409	1,790	4.14	6.56
Proprietors' Income	930	788	718	-1.74	-1.87
Service Income in Agriculture	755	537	424	-3.77	-4.65
United States					
Total Income	247,510	355,013	432,624	3.76	3.92
Per Capita Income	1,695	2,050	2,295	2.04	2.30
Property Income	27,919	45,251	59,279	5.15	5.55
Wages & Salaries	159,658	235,415	290,273	4.07	4.28
Proprietors' Income	45,810	45,732	47,458	0.23	0.75
Service Income in Agriculture	23,591	16,289	15,038	-2.97	-1.59

[a] Except for per capita income, all data are in thousands of 1957-59 dollars. This adjustment was based upon the Consumer Price Index for both state and national income data (see Table A-13 of the Appendix). It is generally believed that this may result in a slight understatement of income in rural areas such as Nebraska. In lieu of reliable comparative price data, this procedure is the best available when the concern is that of measuring real rates of economic growth. The Nebraska price index was not used for reasons explained in note (4) of the previous page.

[b] Compound rates of change.

Source: Tables A-13, A-14, A-15, and A-16 of the Appendix.

shows signs of converging upon the national average. From 1958 to 1963, an expansionary period for both the nation and Nebraska, total income grew at an average rate of 3.1 percent in the state. This is over one-half of one percentage points in excess of the overall rate in Nebraska from 1948 to 1963. By way of comparison, the average rate of growth for the nation was 3.92 percent from 1958 to 1963. This also represents an increase over the longer range 1948 to 1963 period, but a smaller one in absolute and relative terms than occurred in Nebraska.[6] Over the entire postwar period, however, the national rate of growth was one-half again as large as the state rate of growth in total income.

The increase in per capita income is smaller than the increase in total income for both the nation and Nebraska, reflecting the natural population increase. The population increase was very small for Nebraska, however, and it did not contribute to retardation of per capita income gains as it did in some states. Real per capita income in Nebraska in 1963 was 2,167 dollars. During the 15-year period ending in 1963, the average rate of growth in per capita income was 2.04 percent for the nation in contrast to a smaller average of 1.45 percent in Nebraska. During the latter portion of this period (from 1958 to 1963), the per capita income growth rate increased to 2.0 and 2.3 percent for the state and nation respectively. The growth gap which has been unfavorable to Nebraska appears to have narrowed somewhat in later years in relative terms but it has increased absolutely from 51 dollars in 1948 to 128 dollars in 1963.

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[6] This is true in spite of the fact that 1958 was a peak income year in Nebraska, just as 1948 was a peak. In addition, each of the comparison years selected (1948, 1958, and 1963) is a relatively "good" year with respect to farm sources of proprietors' income, and therefore comparative uniformity is probably better achieved. Certainly one could select years other than these to depict different trends, but this would require considerable selectivity to demonstrate facts out of character with long-term income trends depicted by these data.

The average growth rate in total income for the nation was nearly 60 percent larger than the state rate from 1948 to 1963, and about 30 percent larger from 1958 to 1963. Over the entire period, the national growth rate in per capita income was approximately 40 percent larger than the state rate, but from 1958 to 1963 this differential was only about 15 percent. This differential growth is significant in terms of the effect of per capita income as it compounds over a period of time. The fact that there has been a considerable amount of out-migration of population from Nebraska, which is one force that can raise per capita income, also may be of special significance.

The overall pattern is not optimistic, but the relative growth gap must be recognized as having narrowed somewhat recently. While these data are subject to the variability of income in time, this differential postwar growth pattern is similar to that observed from 1900 to 1960, where the state growth rate of 1.83 percent in total income fell far short of national growth.

The three largest components of personal income are proprietors' income, wage and salary income, and property income. The income of proprietors includes net earnings of all non-incorporated enterprises prior to taxes. Wage and salary payments are total renumeration to employees before any deductions, including the value of income in kind. Property income is comprised of rents, interest, and dividends. These, along with a special combination of wage and salary income plus proprietors' income and service income in agriculture are presented in Table III-1.

The growth of property income in the postwar period for both the nation and the state was greater than growth in total personal income. The national property income growth rate from 1948 to 1963 of 5.15 percent was slightly larger than the Nebraska rate of 5.03 percent. The 1958 to 1963 rate of growth in property income for the nation was 5.55 percent, larger than the rate of growth for the entire period. The converse is true for Nebraska, where there is evidence of a slight downward trend in property income.

The 4.14 percent rate of growth in the wages and salaries component of personal income in Nebraska from 1948 to 1963 is comparable to the national growth rate of 4.07 percent. The shorter period of time from 1958 to 1963 reveals an entirely different trend, as the rate of growth in Nebraska (6.56 percent) far exceeds the growth rate in wages and salaries at the national level (4.28 percent).

Maintenance of overall income growth in Nebraska at a rate comparable to the nation may not be a reasonable expectation inasmuch as agriculture is a declining industry sector in terms of its ability to generate net income, a fact evidenced by the trend in agricultural service income.[7] During the 15-year period ending in 1963, agricultural service income changed at an average annual rate of -3.77 percent in Nebraska, while the national rate of change was -2.97 percent for this same period. Table III-1 indicates that the average rate of decrease in agricultural service income was even more rapid (4.65 percent) in Nebraska over the 1958 to 1963 period.

The bulk of this decrease in service income occurred in proprietors' income (-1.74 percent), a very large proportion of which originates in agriculture in Nebraska. In contrast, there was a small but positive rate of growth in the United States in proprietors' income from 1948 to 1963 of 0.23 percent per year.[8] The average rate of growth in proprietors' income in Nebraska from

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[7] Service income from agriculture includes farm wages and salaries plus proprietors' income. Thus, incorporated sources of income are excluded.

[8] Over one-half of all proprietors' income in Nebraska in 1963 originated from farm sources, compared to one-fourth for the nation as a whole. It may be surprising to some that the Nebraska economy appears at best, to be equal to, and at worst, to be at a competitive disadvantage in regard to farm sources of income relative to the nation. When this fact is recognized in conjunction with the greater reliance of the Nebraska economy on agricultural sources of income, the consequences are significant. Other possible factors affecting a greater rate of decline in Nebraska service income from agriculture are crop and price mixes and farm incorporation trends. Interestingly enough, the average annual rate of growth of income from agricultural sources from 1958 to 1963 confirms the 1948 to 1963 trend. From 1958 to 1963 income declined 4.65 percent for Nebraska but only 1.59 percent for the nation.

1958 to 1963 was -1.87 percent, larger than the rate of decline for the entire 15-year period. Proprietors' income for the nation, however, grew at a rate of 0.75 percent during the 1958 to 1963 period.[9] In short, these admittedly limited data indicate that proprietors' income in the nation grew at an increasing rate while it declined at an increasing rate in the state.

Total and per capita income comparisons. Figure III-2 depicts total personal income in Nebraska in real dollars in comparison to the nation over the postwar period. These data utilize a semi-logarithmic scale which gives equal space to equal percentage changes in income, irrespective of absolute amounts. This permits the comparison of rates of growth and decline on a graph. The more rapidly rising line depicting total income in the nation signifies that the nation is growing at a faster rate than the state. Between 1948 and 1956 total personal income in Nebraska hovered around 2.3 billion dollars. It was during this period that the postwar income growth gap became most apparent. From 1956 to 1963, Nebraska income increased from 2.4 to 3.2 billion dollars, a 30.1 percent increase in a seven-year period. In contrast, total income in the nation increased 24.0 percent during these seven years. This contrasts sharply with the

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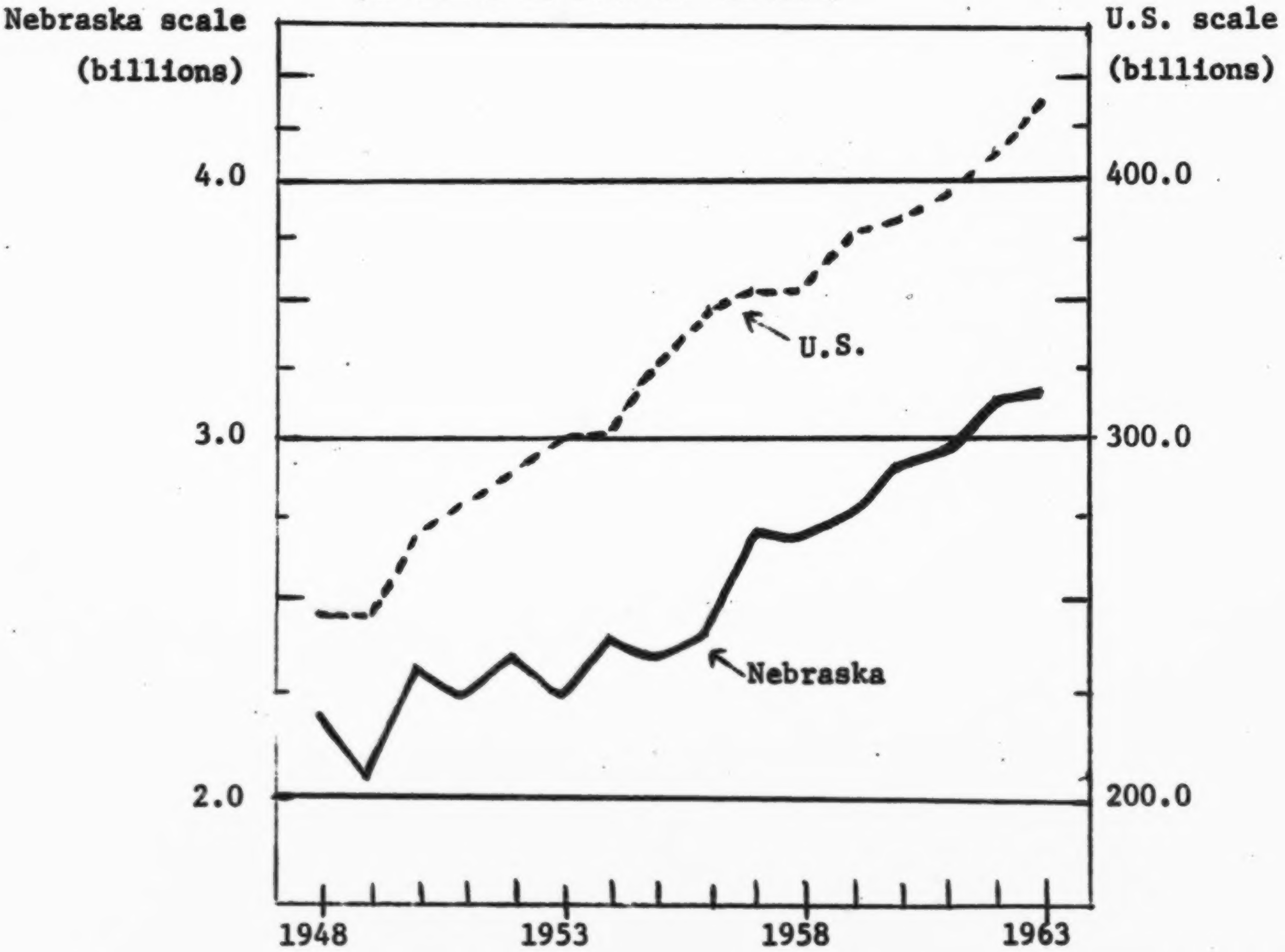
[9] The explanation for the relatively small decline in Nebraska proprietors' income is that the non-farm component is growing rapidly and offsetting the rapidly declining farm sector.

FIGURE III-2

TOTAL REAL PERSONAL INCOME, NEBRASKA
AND THE UNITED STATES
(billions of 1957-59 dollars)



Source: Tables A-13 and A-15 of the Appendix.

entire 15-year period, in which income in Nebraska increased 43.2 percent compared to 74.8 percent for the nation.

Total and per capita income data are presented in Table III-2 in conjunction with the percent change in both total and per capita income from year to year.[10] Per capita income prior to 1950 was similar on the average between the two economies, although the Nebraska data are suspiciously irregular because of farm income variation. Nebraska's per capita income was 2,167 dollars in 1963, close to but less than the national average of 2,295 dollars. This represents an increase of 24.1 percent (421 dollars) since 1948 for the state. The national increase over this same period was 35.4 percent (600 dollars).[11] As was true for total income, significant growth in Nebraska per capita income began to appear after 1956. Real per capita income in Nebraska simply did not experience a secular increase of any significance between 1948 and 1956, while the nation experienced a rise of 381 dollars per capita, or 23.1 percent. Between 1956 and 1963 per capita income in the state increased rapidly, rising by 425 dollars or 24.4 percent.

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[10] These data illustrate the nature of income variability in Nebraska alluded to earlier around the year 1948.

[11] Again this analysis is significantly influenced by the use of base years. For example, from 1950 to 1963, per capita income increased 23.3 percent in Nebraska (410 dollars) and 29.0 percent (516 dollars) for the nation. On this basis the relative growth lag in Nebraska is smaller than it appears when 1948 is used, but it nonetheless exists even after substantial net out-migration.

TABLE III-2

TOTAL PERSONAL INCOME AND PER CAPITA INCOME, NEBRASKA AND THE UNITED STATES, 1948 to 1963[a]

(millions of 1957-59 dollars)

Year	Nebraska				United States			
	Total Income		Per Capita Income		Total Income		Per Capita Income	
	Dollars	Percent Increase[b]	Dollars	Percent Increase[b]	Dollars	Percent Increase[b]	Dollars	Percent Increase[b]
1948	2,209	9.1	1,746	9.3	247,510	1.8	1,695	0.2
1949	2,047	- 7.3	1,575	-10.0	247,532	0.0	1,665	-1.8
1950	2,326	13.6	1,757	11.8	269,060	8.7	1,779	6.8
1951	2,260	- 2.8	1,719	- 2.2	279,513	3.9	1,822	2.4
1952	2,356	4.2	1,805	5.0	290,864	4.1	1,867	2.5
1953	2,260	- 4.1	1,722	- 4.6	303,798	4.4	1,918	2.7
1954	2,413	6.8	1,816	5.5	304,849	0.2	1,891	-1.4
1955	2,361	- 2.2	1,736	- 4.4	328,615	7.9	2,000	5.8
1956	2,422	2.6	1,742	0.3	348,870	6.2	2,086	4.3
1957	2,692	11.1	1,931	10.8	355,840	2.0	2,090	0.2
1958	2,717	0.9	1,963	1.7	355,013	-0.2	2,050	-1.9
1959	2,747	1.1	1,960	- 0.2	375,691	5.8	2,131	4.0
1960	2,934	6.8	2,074	5.8	387,030	3.0	2,150	0.9
1961	2,971	1.3	2,074	0.0	398,447	2.9	2,177	1.3
1962	3,149	6.0	2,177	5.0	417,435	4.8	2,247	3.2
1963	3,164	0.5	2,167	- 0.5	432,624	3.6	2,295	2.1

[a] Totals may not add due to rounding.

[b] Percent increase from the previous year.

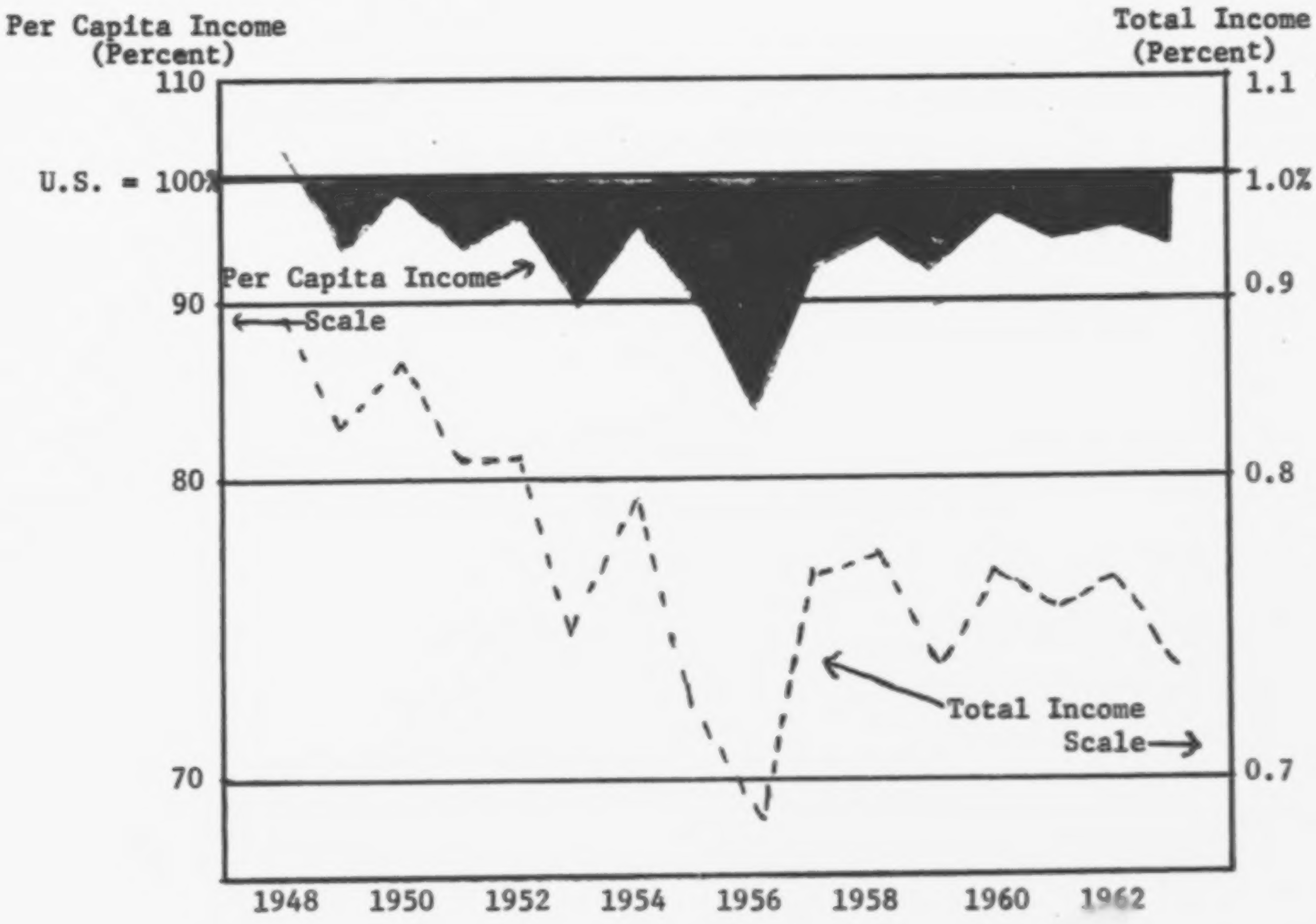
Source: Tables A-13, A-14, and A-15 of the Appendix.

Nebraska's relative growth position in personal income over the postwar period is more pointedly displayed in Figure III-3 where Nebraska's per capita income is depicted relative to that of the nation in the upper portion of the diagram (measured on the left scale), and Nebraska's total income as a percent of the national total income is portrayed in the lower portion of the diagram (measured on the scale to the right). Real per capita income in Nebraska declined from slightly above the national average in 1948 to 83.5 percent in 1956 in a rapid downward trend. This same pattern of relative deterioration occurred in total personal income, which dropped from 0.89 percent of total income in the nation in 1948 to 0.69 percent in 1956. After a rapid rise from 1956 to 1958, total income in Nebraska has leveled off at three-quarters of one percent of the national total, as growth in total personal income in the state has closely approximated the national rate of growth. Per capita income has increased since 1956 to the point where it was 94.4 percent of the national average in 1963.

Changes in aggregate income components. The previous analysis revealed that postwar income growth patterns in Nebraska are different from those experienced by the nation. In general, a deterioration in the growth pattern in Nebraska was observed from 1948 to 1956. This stagnation appeared to end somewhat abruptly around 1956 as total personal income moved from 2.4 to 2.7 billion dollars from 1956 to 1958. Thereafter, growth in income in Nebraska was less dramatic,

FIGURE III-3

NEBRASKA TOTAL PERSONAL INCOME AND PER CAPITA PERSONAL INCOME AS A PERCENT OF THE UNITED STATES, 1948 to 1963



Source: Table A-14 of the Appendix.

although the growth differential between the two areas narrowed as the data portrayed in Table III-1 indicated.

Within this changing aggregative pattern, major shifts were occurring as various income components were growing at rates different from the nation. Table III-3 indicates that wages and salaries are a smaller component of 1963 Nebraska personal income (56.6 percent) than is true for the nation (67.1 percent). This condition has existed throughout the 1948 to 1963 period, but the percentage differential between the nation and state has been halved since 1948 as Nebraska growth in wages and salaries has been very large. Total wages and salaries in Nebraska increased 83.8 percent since 1948 to 1.8 billion dollars in 1963, a rate of increase similar to the national one of 81.8 percent. The narrowed differential between the two areas is thus due to a smaller growth rate in total income for Nebraska, and not a more rapid rise in wages and salaries at the state level than in the nation.[12]

The property income component of personal income increased more rapidly than total income in the nation and in the state to 453 million dollars in 1963 in Nebraska. This represents a change from 9.8 to 14.3 percent of total income in Nebraska. In contrast, property income increased from 11.3 to 13.7 percent of total income for the nation from 1948 to 1963. Actually, the relative increase in the

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[12] That is, wages and salaries, which comprised 44.1 percent of total income in Nebraska in 1948 increased to 56.6 percent in 1963 because total income grew slowly.

TABLE III-3

PERSONAL INCOME BY MAJOR COMPONENT, NEBRASKA AND THE UNITED STATES, 1948 and 1963[a]

(millions of 1957-59 dollars)

Income Components	1948		1963		Percent Change 1948 to 1963
	Dollars	Percent Distribution	Dollars	Percent Distribution	
Nebraska:					
Total Personal Income	2,209	100.0	3,164	100.0	43.2
Wages & Salaries	974	44.1	1,790	56.6	83.8
Other Labor Income[b]	17	0.7	59	1.8	247.1
Property Income	217	9.8	453	14.3	108.8
Proprietors' Income	930	42.1	718	22.7	- 22.8
Farm	696	31.5	382	12.1	- 45.0
Non-farm	234	10.6	336	10.6	43.6
Other[c]	72	3.3	144	4.6	100.0
United States:					
Total Personal Income	247,510	100.0	432,624	100.0	74.7
Wages & Salaries	159,657	64.5	290,272	67.1	81.8
Other Labor Income[b]	3,237	1.3	12,276	2.8	279.2
Property Income	27,919	11.3	59,279	13.7	112.3
Proprietors' Income	45,810	18.5	47,458	11.0	3.6
Farm	19,976	8.1	12,210	2.9	- 38.6
Non-farm	25,834	10.4	35,248	8.1	36.4
Other[c]	10,885	4.4	23,338	5.4	114.4

[a] Totals may not add due to rounding.

[b] Includes employee contributions to private pensions and related programs plus compensation for injuries and pay of military reservists.

[c] All transfer payments less social insurance contributions.

Source: Tables A-13 and A-17 of the Appendix.

state (108.8 percent) was less than the national rate (112.3 percent), although growth in property income in Nebraska far exceeds the rate of change in total income of 43.2 percent for the 15-year period terminating in 1963. Both the "other labor income" and "other" categories (the latter is comprised largely of transfers and O.A.S.I. contributions) increased as a share of total income in the 1948 to 1963 period in the state and nation, although in each instance the proportional increase was less in Nebraska than in the nation.

The large variation in income growth which exists between the two economies is almost entirely due to differential patterns of growth in proprietors' income. From 1948 to 1963 proprietors' income in Nebraska declined 212 million dollars, or 22.8 percent. This income component constituted 22.7 percent of total income in Nebraska in 1963, compared to 42.1 percent in 1948. During this same period, proprietors' income in the nation increased by 3.6 percent, although it decreased in relative importance from 18.5 to 11.0 percent of total income in the nation.

Non-farm proprietors' income has maintained its relative importance in Nebraska, comprising 10.6 percent of total income in 1963 and 1948. Proprietors' income from non-farm sources was 10.4 percent of total income in 1948 for the nation, but decreased in relative importance to 8.1 percent by 1963. This increasing relative importance in Nebraska is attributable to (1) a slower rate of growth in total income in the state, and (2) a more rapid rate of expansion in non-farm proprietors' income in the state than in the nation.[13]

Proprietors' income from farm sources was 696 million dollars, or 31.5 percent of total personal income in Nebraska in 1948. Since then it has declined to one-third its previous relative importance, or to 12.1 percent of total personal income in 1963. This is a decline of 314 million dollars or 45.0 percent. This relative decline is in excess of the national decline in farm sources of proprietors' income which averaged 38.6 percent. In addition, the nation has become much less reliant on the farm portion of proprietors' income with the passage of time, as it constituted only 2.9 percent of total income in 1963.

Shifts in Sources of Income

Shifts in aggregate income components. Relative growth patterns are brought into sharper focus when income sources are examined in the shift-differential context as in Table III-4 below. Because the Nebraska economy grew at a slower rate than the nation, a downward shift or growth gap of 695 million dollars in total personal income occurred between 1948 and 1963.[14] Nearly two-thirds (446 million dollars) of this total gap is a product of the mix effect; i.e., disproportionate reliance in the state upon income components which have grown slowly

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[13] Non-farm proprietors' income increased 43.6 percent since 1948 in the state and 36.4 percent in the nation.

[14] Again, the time problem is apparent. The use of data representing 1947 or 1949 presents a less serious growth picture for Nebraska in that the growth gap is reduced by approximately 150 billion dollars.

TABLE III-4

SHIFTS IN PERSONAL INCOME COMPONENTS IN NEBRASKA, 1948 to 1963 and 1958 to 1963[a] (millions of 1957-59 dollars)

Income Components	Income			1948 to 1963			1958 to 1963		
	1948	1958	1963	Growth Gap	Mix Effect	Area (Dis) Advantage	Growth Gap	Mix Effect	Area (Dis) Advantage
Total	2,209	2,717	3,164	-695	-446	-250	-148	- 87	- 62
Wages & Salaries	974	1,409	1,790	88	70	19	72	20	52
Other Labor Income	17	44	59	29	35	- 6	5	4	1
Property Income	217	355	453	74	82	- 8	20	32	- 12
Proprietors' Income	930	788	718	-907	-661	-246	-243	-143	-100
Farm	696	495	382	-834	-789	- 45	-222	-152	- 69
Non-Farm	234	293	336	- 73	- 90	17	- 21	- 37	16
Other Income	72	122	144	18	28	- 10	- 5	- 1	- 4

[a] Totals may not add due to rounding. A (-) indicates a growth gap or downward shift, whereas the omission of sign indicates an upward shift.

Source: Computed from Table A-13 and Table A-17 of the Appendix.

at the national level. An area disadvantage of 250 million dollars also occurred between 1948 and 1963.

Table III-4 indicates that much of this overall growth gap is a result of changes in farm sources of proprietors' income, which exhibited a growth gap or a downward shift of 834 million dollars over the 1948 to 1963 period. A smaller downward shift of 73 million dollars also exists for Nebraska non-farm proprietors' income producing a total growth gap in proprietors' income of 907 million dollars. The farm portion of proprietors' income exhibited a small area disadvantage, whereas the non-farm proprietors' income component experienced a small area advantage. The total growth gap of 907 million dollars in proprietors' income contained a 246 million dollar area disadvantage. Substandard growth in Nebraska resulted from the greater relative importance of this income component to the Nebraska economy (the mix effect), and to a lesser extent because of Nebraska's area disadvantage in proprietors' income.

Wage and salary sources of personal income grew more rapidly than total personal income as a result of a favorable 70 million dollar mix effect which was complemented by a smaller area advantage to produce an upward shift or a "positive" gap. Table III-4 also indicates that property income has contributed to income growth in Nebraska through a positive mix effect of 82 million dollars. This was offset by an eight million dollar area disadvantage between 1948 and 1963.

Table III-4 also contains data for the 1958 to 1963 period. There exists a comparatively smaller growth gap for Nebraska over this period of time of 148 million dollars.[15] The unfavorable economic structure of the state is again reflected in the mix effect, in that growth in total personal income in the state was dominated by a 143 million dollar downward shift in proprietors' income due to the mix effect. The growth gap in farm sources of proprietors' income was 243 million dollars. This is much larger than the total overall gap as Table III-4 indicates. Again, this overall growth gap is related primarily to farm source of proprietors' income where the growth gap was 222 million dollars.

The area disadvantage factor is also unfavorable to Nebraska in the 1958 to 1963 period, as farm sources of proprietors' income declined more in the state than in the nation. The area disadvantage in proprietors' income is proportionately larger in the shorter 1958 to 1963 period when it comprised 41.9 percent of the total growth gap compared to 1948 to 1963 when the area disadvantage constituted 21.6 percent of the total growth gap. This increasing area disadvantage in farm sources of proprietors' income is a most bothersome development, although it appears to reflect farm income variability as much as secular trend forces. What is significant though, is that Nebraska does not exhibit a competitive advantage in farm sources of proprietors' income compared to the nation.

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[15] The average annual growth gap for the entire 1948 to 1963 period was 43.4 million dollars as compared to 24.7 million in the shorter period of time from 1958 to 1963.

These data suggest that the competitive position of Nebraska agriculture has deteriorated or at best just held its own in recent years relative to the nation to the extent that this is represented by net income data. More important, these data also indicate that a sizable growth penalty has been attendant to heavy reliance on agricultural income; i.e., the industry mix pattern in the state. Because annual income variations do play a large role in the area advantage effect, it is probably more realistic to assign more importance to the mix effect. That is, market access for the agricultural industry is an important restraint upon economic growth in the state, in addition to the fact that one has some reason to suspect that market access may be somewhat unfavorable for agriculture in the state. Some evidence of the latter is furnished by the growth gap in proprietors' income of 243 million dollars from 1958 to 1963 which would have been less if farm sources of proprietors' income in Nebraska had declined only at the national rate. The area disadvantage of 100 million dollars is evidence of a more rapid state decline.

Unfortunately, these income data are much too aggregative to give anything but the most general indication of the problems and potential of income sources. More specific sectors of the economic structure of the state must be analyzed to determine industry weaknesses and strengths more exactly.

Sources of income by industry. All but two components of personal income are allocated by industry category as participation income by the Department of Commerce. These two sources of income, property income and transfer payments plus government payments to the military, comprise about one-fifth of total personal income for the state and the nation. The remaining proportion of personal income normally is referred to as participation income earned from current production. This includes income from wages and salaries, other labor income, and proprietors' income.[16]

Table III-5 presents participation income for Nebraska for the years 1948, 1958, and 1963 along with percentage changes between these years. From 1948 to 1963 total participation income in Nebraska increased 30.1 percent to approximately 2.5 billion dollars, slightly less than one-half the rate of increase for the nation as a whole. Between 1958 and 1963 participation income in Nebraska increased 15.0 percent in comparison to an increase of 23.8 percent for the United States. This is still a relatively large difference in growth, although the differential has narrowed considerably compared to the period from 1948 to 1963.

The largest relative gain in participation income came from the mining industry sector, but the absolute amount in 1963 (11 million dollars) was small. Over this 15-year period of time, only transportation and farm sources of participation income grew at rates less than the state average. Between 1948 and 1963, transportation sources of participation income in the Nebraska economy increased

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[16] Other labor income is largely pension and health and welfare income.

TABLE III-5

INDUSTRIAL SOURCES OF PARTICIPATION INCOME AND PERCENTAGE CHANGE, NEBRASKA AND THE UNITED STATES, 1948, 1958, and 1963[a]

(millions of 1957-59 dollars)

Industries	Nebraska					United States				
	1948	1958	1963	1948-63 Percent Change	1958-63 Percent Change	1948	1958	1963	1948-63 Percent Change	1958-63 Percent Change
TOTAL	1,901	2,151	2,474	30.1	15.0	205,042	275,270	340,869	66.2	23.8
Farming	757	577	424	-44.0	-26.5	23,603	16,941	15,000	-36.4	-11.6
Mining	2	12	11	450.0	- 8.3	4,535	4,304	3,999	-11.8	- 7.1
Construction	86	123	175	103.5	42.3	11,440	18,706	21,695	89.6	16.0
Manufacturing	167	268	339	103.0	26.5	58,496	82,194	99,590	70.2	21.2
Whls. & Retail Trade	375	446	545	45.3	22.2	42,531	55,130	64,956	52.7	17.8
Fin., Ins., & Real Estate	55	108	138	150.9	27.8	7,180	13,911	17,829	148.3	28.2
Transportation	126	151	151	19.8	0.0	12,413	14,509	15,859	27.8	9.3
Comm. & Public Utilities	29	53	65	124.1	22.6	4,871	8,109	9,499	95.0	17.1
Services	150	168	306	104.0	82.1	21,993	27,583	46,114	109.7	67.2
Government	151	240	314	107.9	30.8	17,347	32,911	45,112	160.1	37.1
Other	2	5	6	200.0	20.0	632	972	1,214	92.1	24.9

[a] Totals may not add due to rounding.

Source: Tables A-13 and A-16 of the Appendix.

19.8 percent to 151 million dollars, compared to a 27.8 percent increase at the national level. This comparatively disadvantageous growth is even more obvious when one examines the data since 1958. From 1958 to 1963 there was no growth in this sector of the Nebraska economy, whereas transportation sources of income in the nation expanded by 9.3 percent. Participation income from farm sources declined 44.0 percent in Nebraska from 1948 to 1963, while the average decline for the nation was 36.4 percent. The currency of the agricultural situation in the state of Nebraska again is exemplified by the relative decline in farm sources of participation income between 1958 and 1963 for the state (26.5 percent) compared to a much smaller decline (11.6 percent) for the nation over this same period of time.[17]

Between 1948 and 1963 participation income from construction in Nebraska increased to 175 million dollars, a rise of 103.5 percent. This compares to an increase of 89.6 percent for the nation as a whole. From 1958 to 1963 the growth rate of 42.3 percent in construction in Nebraska was nearly three times as large as the national change of 16.0 percent. The rise in participation income in manufacturing in Nebraska was 103.0 percent over the 15-year period, whereas the national increase was 70.2 percent. In 1963 participation income originating in manufacturing in Nebraska was 339 million dollars, an increase since 1958 roughly proportionate to the increase at the national level.

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[17] It must be remembered that conversion of these data to real income amounts can influence rates of growth in a given area, but the conversion of data for both economies does not change the comparative rates of advance or decline.

Wholesale and retail trade industries are also important sources of participation income in Nebraska in an absolute sense; however, the percentage growth over the 15-year period ending in 1963 was 45.3 percent in Nebraska as compared to 52.7 percent for the nation as a whole. The trend in the trade sector since 1958 is just the reverse, in that growth has been more rapid for Nebraska (22.2 percent) than for the nation (17.8 percent).[18] Participation income emanating from communications and public utilities amounted to 65 million dollars in 1963, a 124.1 percent increase over 1948. This represents a larger relative rate of growth than occurred in the nation as a whole (95.0 percent) for the 1948 to 1963 period. The rate of increase from 1958 to 1963 for the state was 22.6 percent, which also exceeds the national growth rate of 17.1 percent for this same period.

Participation income originating in the services sector has increased 104.0 percent for the state of Nebraska, as compared to a slightly larger increase of 109.7 percent for the nation from 1948 to 1963. Participation income in services was 306 million dollars in 1963 in Nebraska, an increase of 82.1 percent since 1958. For this latter period of time, participation income in services increased 67.2 percent for the nation. Participation income in the state from finance industries grew at a rate comparable to the nation over both periods of time. The government sector has grown less rapidly in the state than in the nation over both periods of time. In 1963 participation income originating in the government sector in Nebraska was 314 million dollars, an increase of 107.9 percent since 1948 and an increase of 30.8 percent since 1958. The national increase for similar time periods was 160.1 and 37.1 percent, respectively.

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[18] The trade and transportation industries are the only sources of participation income which grew at a rate below 100 percent in Nebraska over this 1948 to 1963 period, whereas the finance, services, and government sectors were the only sectors which expanded in excess of 100 percent in the nation.

Relative industry specialization. Table III-6 indicates the importance of these 11 income sources relative to total participation income for the state and the nation. Agriculture, which was the source of 39.8 percent of Nebraska participation income in 1948, has declined in relative importance since then. In 1963, 17.1 percent of participation income originated from the farming sector in Nebraska compared to 4.4 percent in the nation.[19]

There has been a small gain in the relative importance of wholesale and retail trade industries, as participation income originating in this sector amounted to 22.0 percent of total participation income in 1963, up 2.3 percentage points since 1948 in Nebraska. The same trend has not occurred at the national level. Table III-6 indicates that the trade sector has become relatively less important to the nation, falling from 20.7 to 19.1 percent of the total participation income in 1963. Manufacturing was third in importance to the Nebraska

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[19] A sizable proportion (9.7 percentage points) of this relative decline in the farm sector has come about since 1958 when participation income originating in the agricultural sector comprised 26.8 percent of total participation income.

TABLE III-6

DISTRIBUTION OF PARTICIPATION INCOME AND LOCATION QUOTIENTS, NEBRASKA AND THE UNITED STATES, 1948 to 1963[a] (percent)

Industries	1948		1963		Nebraska Location Quotient	
	Nebraska	United States	Nebraska	United States	1948	1963
Total	100.0	100.0	100.0	100.0		
Farming	39.8	11.5	17.1	4.4	3.46	3.89
Mining	0.1	2.2	0.4	1.1	.05	.33
Construction	4.5	5.6	7.1	6.4	.80	1.11
Manufacturing	8.8	28.5	13.7	29.2	.31	.47
Whls. & Retail Trade	19.7	20.7	22.0	19.1	.95	1.15
Fin., Ins., & Real Est.	2.9	3.5	5.6	5.2	.83	1.08
Transportation	6.6	6.1	6.1	4.7	1.08	1.30
Comm. & Public Util.	1.5	2.4	2.6	2.8	.63	.93
Services	7.9	10.7	12.4	13.5	.73	.92
Government	7.9	8.5	12.7	13.2	.93	.96
Other	0.1	0.3	0.2	0.4	.33	.50

[a] Totals may not add due to rounding.

Source: Table III-5.

economy as a source of participation income in 1963, furnishing 13.7 percent of total participation income. This is an increase of 4.9 percentage points over 1958, a period when the nation did not experience a significant increase in manufacturing as a source of participation income. While manufacturing has become relatively more important to

Nebraska, it remains significantly under-represented as a source of income to the Nebraska economy when compared to the nation, which obtains 29.2 percent of total participation income from the manufacturing sector.

Service and government sectors each were next in importance to the Nebraska economy as sources of income in 1963, exhibiting relative distribution patterns similar to those observed at the national level. In 1963 services constituted 12.4 percent of the Nebraska participation income, an increase of 4.7 percentage points over the 15-year period under consideration. Government comprised 12.7 percent of Nebraska's participation income in 1963, an increase of 4.8 percentage points since 1948. The increase in government as an income source in Nebraska is similar to that experienced at the national level, but services did not increase in relative importance as rapidly in the nation as they did in Nebraska. The Nebraska economy also obtains a smaller proportion of participation income from these two sectors than does the national economy.[20]

There are numerous other differences between the distribution of participation income in the state and the national distribution by industry source. Construction, for example, constituted 7.1 percent of participation income in the state in 1963, an increase since 1948 of 2.6 percentage points compared to a 0.8 percentage point increase for the nation. Similarly, finance became a more integral sector for the state of Nebraska over this period of time just as it did for the nation as a whole. Transportation, on the other hand, declined more rapidly for the nation (1.4 percent) than it did for Nebraska (0.5 percent).[21]

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[20] Most of the increase in services as a source of income to the Nebraska economy has come about since 1958, when services constituted 7.8 percent of total participation income. This is an experience paralleled at the national level. Government has increased relatively steadily since 1948 as a source of income.

Table III-6 also contains location quotients (L_q) for the Nebraska economy for the years 1948 and 1963. As was noted earlier, these ratios indicate the extent to which income is specialized in one sector in the state relative to the nation. While this is an admittedly crude procedure for ascertaining export and import market tendencies it nonetheless furnishes worthwhile insights into the economic structure of an area. Participation income originating from farm sources was 3.46 times as important to the Nebraska economy as the nation in 1948. In 1963, even greater specialization occurred for farm sources of income, as the L_q value was 3.89 for Nebraska.[22] Transportation was another specialized sector in 1948, in that 1.08 times as much income was generated at the state level in this sector than was true of the nation. In 1963, relative specialization in transportation had increased for the state as the L_q value was 1.3 which suggests that Nebraska may be exporting in this sector.

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[21] It must be remembered that just because increasing relative amounts of participation income are derived from a given sector in the Nebraska economy relative to the nation, this does not mean that growth in income is more rapid in Nebraska, or that it has occurred at all.

[22] The data for 1958 indicate still more specialization (L_q = 4.32) in farm sources of participation income. This reflects, in part, a relatively good year in terms of agricultural income in Nebraska compared to the nation.

In 1948 communication and public utility industries were a relatively under-represented source of income for the state (L_q = .63) as was also true for manufacturing (L_q = .31). This may indicate reliance on imports. By 1963 income originating in manufacturing in Nebraska had increased relative to the nation, as the L_q value rose from .31 to .47 for the state. The manufacturing sector on balance was very much under-represented in Nebraska in 1963, and appears to be a dampening force on the multiplier; i.e., it is detracting from the income flow and growth rate of the state. At the same time the L_q value has increased from .31 to .47 which indicates a tendency to become more self-reliant over time. Similar to manufacturing, the construction, trade, and finance sectors became more important to the state economy with the passage of time. In 1963, more of Nebraska's income came from these three sectors than was true for the nation as a whole. Specialization increased dramatically for the communications and public utilities sector as the L_q value moved from .63 to .93 percent of national specialization in this sector. Specialization in government and services remained below the national values ($L_q < 1.0$) and appeared to change in rough proportion to national changes.

The percentage data contained in Table III-6 can be utilized in such a way as to indicate the extent of overall specialization or diversification in the state and national economies. An aggregate specialization index can be developed by arraying participation income by industry category, starting with the most important (i.e., the largest percentage value)and moving to the least important in that order. These percentages are then cumulated from the highest to the lowest and the cumulative total is summed. The specialization index (S) is:

$$S = \frac{B - (\frac{n+1}{2} \cdot 100)}{(\frac{n-1}{2} \cdot 100)}$$

where (B) is the cumulative total percent distribution obtained as described above, and (n) is the number of industry categories.[23]

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[23] An example might be helpful. Assume that a hypothetical economy has four industry sectors and all income originates in one sector--i.e., specialization is complete. Cumulatively, we have a distribution of 100 + 100 + 100 + 100 = 400, i.e., B = 400. In this case n = 4 and our index of specialization (S) is:

$$S = \frac{400 - (\frac{5}{2} \cdot 100)}{(\frac{3}{2} \cdot 100)} = 1.0$$

Conversely, a four sector economy which was perfectly distributed with respect to the origin of income would have a B value of 25 + 50 + 75 + 100 = 250, and

$$S = \frac{250 - (\frac{5}{2} \cdot 100)}{(\frac{3}{2} \cdot 100)} = 0.0$$

A comparison of this type is influenced by the degree of industry disaggregation which must be equal in comparison areas. This index is the result of related material in Walter Isard, Methods of Regional Analysis: An Introduction to Regional Science (Cambridge: The M.I.T. Press, 1960), pp. 273-75, and discussion with T. W. Roesler of the Department of Economics, University of Nebraska and Lowell Ashby of the Office of Business Economics, U.S. Department of Commerce.

Specialization indices calculated for the Nebraska (S^s) and the national (S^n) economies in the manner described above are $S^s = .622$ and $S^n = .559$ for 1948. A relative index (S_r^s) is easily obtained for Nebraska by:

$$S_r^s = \frac{S^s}{S^n}, \text{ or } \frac{.662}{.559} = 1.11$$

A value for S_r^s greater than unity indicates that specialization in the state exceeds specialization for the nation, whereas a value less than unity depicts the converse. The state was more specialized in 1948 than the nation as the index value ($S_r^s = 1.11$) reveals. The specialization index for Nebraska (S^s) in 1963 was .556, indicating relatively less specialization in the state economy compared to 1948. This is due to the changes in agriculture's importance. The national specialization index value (S^n) was .535 for 1963, about the same as 15 years earlier. These data furnish a crude indication of specialization. This may not be as useful an indication of specialization as industry location quotients are because it does not reflect industry shifts.

Shifts in participation income. The slow rate of growth of the postwar Nebraska economy is reflected in the shift-differential analysis in Table III-7 below. The growth gap for Nebraska from 1948 to 1963 in real participation income was 685 million dollars. Most of this gap (588 million dollars, or 86.0 percent) was due to unfavorable industry mix patterns in the state. The remainder represents an area or competitive disadvantage for the state of Nebraska. The

TABLE III-7

SHIFTS IN PARTICIPATION INCOME IN NEBRASKA, 1948 to 1963 and 1958 to 1963[a]
(millions of 1957-59 dollars)

Industries	Participation Income			Change 1948 to 1963			Change 1958 to 1963		
	1948	1958	1963	Growth Gap	Mix Effect	Area (Dis) Advantage	Growth Gap	Mix Effect	Area (Dis) Advantage
TOTAL	1,901	2,151	2,474	-685	-588	-97	-188	-168	-21
Farming	757	577	424	-834	-777	-58	-290	-204	-86
Mining	2	12	11	7	- 2	9	4	- 4	0
Construction	86	123	175	32	20	12	23	- 10	32
Manufacturing	167	268	339	61	7	55	7	- 7	14
Whls. & Retail Trade	375	446	545	- 78	- 51	-28	- 7	- 27	20
Fin., Ins., & Real Estate	55	108	138	47	46	1	4	5	0
Transportation	126	151	151	- 58	- 48	-10	- 36	- 22	-14
Comm. & Public Utilities	29	53	65	17	9	8	- 1	- 4	3
Services	150	168	306	57	65	- 9	98	73	25
Government	151	240	314	63	142	-79	17	32	-15
Other	2	5	6	2	0	2	0	0	0

[a] Totals may not add due to rounding.

Source: Table III-5.

manufacturing, mining, construction, communications, and finance sectors were the industry categories which exhibited an area advantage in income from 1948 to 1963 in the state of Nebraska, but the total is small. Higher than national average growth rates for the construction, manufacturing, finance, communications, services, and government sectors produced positive mix effects which contributed to a lowering of the net growth gap for the state.

Total income data analyzed earlier suggested that the agricultural sector was a major source of difficulty with respect to sluggish growth rates in income and, in fact, more than accounted for the total growth gap in total personal income. This conclusion is substantiated again by analysis of participation income in Table III-7, where this sector exhibited a 834 million dollar growth gap (93 percent of which is of the mix type) from 1948 to 1963 and a gap of 290 million dollars from 1958 to 1963. This is indicative of the highly specialized nature of the Nebraska commitment to the agricultural sector and the disadvantages which have been attendant to specialization in agriculture in the postwar period.

Growth gaps in participation income existed only in the trade and transportation industries. Industries other than the aforementioned three have grown faster than the all-industry rate of growth for the nation and, as a consequence, a positive growth gap or an upward shift of 32 million dollars exists for construction, 61 million dollars for manufacturing, 47 million dollars for finance, 57 million dollars for services, 17 million dollars for communications, and 63 million dollars for government.

Income originating in some of these industry sectors has increased more rapidly in Nebraska than for the nation between 1948 and 1963, as is indicated by positive values in the area advantage column. Participation income for manufacturing has grown more rapidly in Nebraska by the indicated 55 million dollar competitive advantage which, when added to a favorable mix effect, reduced the overall growth gap by 61 million dollars. Similarly, the construction, mining, finance, and communications sectors have grown more rapidly in the state of Nebraska than they did for the nation, although the amounts are rather negligible. Approximately two-thirds of the construction industry's 32 million dollar contribution toward reducing the overall growth gap is a result of more rapid growth in Nebraska than in the nation. On the other hand, there is an area disadvantage of 79 million dollars in the government sector; i.e., growth in government sources of participation income in the state of Nebraska has been less than that at the national level. Similarly, there is an area disadvantage in services. Wholesale and retail trade industries also exhibited a less rapid rate of growth in the state than was true for the nation as a whole, and the national rate of growth for this sector was less than the national average. Thus, there exists a 28 million dollar area disadvantage and an unfavorable 51 million dollar mix effect. Consequently, this industry contributed to enlargement of the growth gap in participation income by 78 million dollars.

Data for 1958 to 1963 indicate somewhat similar trends. There does not appear to be any appreciable reduction in the rate of decline of the agricultural sector on an annual basis. The net growth gap for the entire economy of 188 million dollars for this five-year period is again smaller than the total gap in agriculture, which amounted to 290 million dollars. Once again, keeping the growth gap at a level less than that which occurred in the agricultural sector required more rapid rates of growth in other sectors of the Nebraska economy. The services, government, and construction sources of participation income have exhibited this tendency.[24]

Between 1958 and 1963, there were several sectors in the Nebraska economy which exhibited an area advantage in participation income by growing more rapidly than the same sector at the national level. Construction, for example, grew more rapidly than its national counterpart. Consequently, there was a net contribution, or a lowering of the growth gap by 23 million dollars, in spite of the fact that the construction industry grew less rapidly than the national average, as is indicated by the -10 million dollars mix effect. Income originating in wholesale and retail trade grew more rapidly between 1958 and 1963 in the state of Nebraska than the counterpart industry for the nation as a whole. This is a reversal of the trend indicated earlier when, between 1948 and 1963 there was an area disadvantage for the Nebraska trade sector. Income originating in the government and transportation sectors reveals a competitive disadvantage in the state of Nebraska. The data suggest that net income problems in the agricultural sector are not being corrected, in that the area disadvantage from 1958 to 1963 of 86 million dollars is greater than that for the 1948 to 1963 period. This competitive disadvantage, when added to the sluggish growth rate of the nation as a whole in this sector (the large negative mix effect), results in the 290 million dollar growth gap of agriculture.

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[24] The extent to which services are expanding is illustrated by comparing the upward shift in services, a 98 million dollar contribution toward lowering the growth gap from 1958 to 1963 to the 57 million dollar upward shift over the longer period, 1948 to 1963.

The analyses above reveal something less than an optimistic profile of income growth in the postwar Nebraska economy. This is particularly true in terms of volume measures of income growth (e.g., total income). The reverse was true to a limited extent with regard to per capita income patterns, where growth in Nebraska was shown to be favorable in recent years when compared to the nation, although per capita income in Nebraska was 128 dollars less than the national level in 1963. Income growth patterns such as those which have been revealed must be made the target of corrective policies. This requires first that residents of Nebraska recognize these patterns of decline and remember that the income gap does interact with the loss of human resources.[25] The reality which growth patterns such as these produce can be revealed in part by an examination of income distribution levels in Nebraska relative to the nation with the passage of time.

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[25] Data from Chapter IV depict net out-migration and the potential population lost from 1948 to 1963.

Comparative Income Distribution

The pace of technological change in recent years has released a mass of human resources from agricultural occupations. Non-farm economic growth is an important antidote which is necessary to the state if released manpower is to be absorbed productively. Those facts examined thus far suggest that development of non-agricultural industries has not been rapid enough, as the rate at which manpower has been released has taxed the state's ability to exhibit growth comparable to the rest of the nation. Nearly all important non-agricultural industries grew at least as rapidly as the same sector in the nation, however. To expect even better than national performance from Nebraska's industries may not be reasonable. The failure of the population to grow at a rate necessary to sustain a viable economy and the rapid decline of agriculture production as a source of income cannot help having personal ramifications upon residents of the state. This is reflected in part in the distribution of family income.

Family income data differ from the concept and estimates of personal income discussed earlier. The former includes wages and salaries, self employment income, income from royalties, rents, interests, dividends, transfer-payments and excludes income in kind. Limited use of these data presented here on a current dollar basis is necessary to gain additional insights into the impact of economic growth in Nebraska.

Table III-8 depicts median money income for families and unrelated individuals for the years 1950 and 1960. Median family income for families and unrelated individuals in Nebraska was 4,065 dollars in 1960, 726 dollars less than the comparable figure for the United States.

TABLE III-8

INCOME CHARACTERISTICS OF FAMILIES AND UNRELATED INDIVIDUALS, NEBRASKA AND THE UNITED STATES, 1950 and 1960[a]

	Nebraska			United States		
	1950	1960	Percent Change	1950	1960	Percent Change
Median ($)						
Rural Families	2,148	3,243	51.0	1,944	3,746	92.7
Urban Families	2,737	4,861	77.6	2,971	5,198	75.0
All Families	2,436	4,065	66.9	2,635	4,791	81.8
% Under $3,000						
Rural Families	68.4	46.5	-21.9	69.8	41.8	-28.0
Urban Families	55.3	30.5	-24.8	50.5	29.0	-21.5
All Families	61.8	37.5	-24.3	56.6	32.5	-24.1

[a] Current dollars of 1949 and 1959 income reported in 1950 and 1960. Totals may not add due to rounding.

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Population: 1960*, PC(1), 29(C), p. 166 and 1(C), p. 227.

In 1950, however, the differential between the state and nation was only 199 dollars. Over this decennial period, the median money income of families and unrelated individuals in Nebraska increased 66.9 percent as compared to 81.8 percent for the nation as a whole.

This analysis can be disaggregated into a rural-urban basis to help explain the gap between the two economies. The median money income level for the urban community in Nebraska increased 77.6 percent over this decennial period to 4,861 dollars in 1960. This compares favorably to a national increase of 75 percent for urban families over the same period. However, median money income in the United States was 337 dollars higher than in the state of Nebraska in 1960. This represents an increase of about 100 dollars in the absolute gap between the urban areas of the state and nation over the 10-year period.

For rural families there was an absolute increase in the overall gap between the state and nation from 199 to 726 dollars between 1950 and 1960. In 1960, median money income in the rural sector in the state was 3,243 dollars, a 51.0 percent increase over 1950. In contrast, the comparable figure for the nation in 1960 was 3,746 dollars, an increase of 92.7 percent, or 1,802 dollars over the decennial period. During the same period, money income for families and unrelated individuals in rural Nebraska increased 1,095 dollars. In 1950, rural residents in Nebraska had a median money income (2,148 dollars) in excess of their cohorts in the nation (1,944 dollars), whereas in 1960 the reverse was true in the amount of 503 dollars.[26]

Table III-8 also provides some crude insights into the pattern of income distribution in Nebraska as compared to the United States in the poverty frame of reference. In the rural, urban, and total categories, the percentage of Nebraska's residents having money incomes under 3,000 dollars exceeded the national average in 1960. In 1960, for example, 37.5 percent of all Nebraska residents had incomes less than 3,000 current dollars, 5.0 percent more than was true at the national level. This occurred concurrent to a 24 percent reduction in the number of persons in this class for both the state and the nation since the 1950 census. As expected, a large percentage of rural residents had incomes under 3,000 current dollars in the state and nation. In Nebraska, 46.5 percent of the rural component had incomes under 3,000 current dollars in 1960, compared to 41.8 percent for the nation as a whole. From 1950 to 1960, there was a reduction of 21.9 percent in the proportion of rural families with incomes of 3,000 current dollars or less in Nebraska. This compared to a much larger reduction of 28.0 percent for the nation. Rural farm incomes, which are very significant in an absolute sense to the state of Nebraska, appear to have failed to increase as rapidly in the state as in the nation from 1950 to 1960. Another possibility is that rural non-farm income and growth patterns are different between the two economies. A still more detailed breakdown of data can assist in making this determination.

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[26] The urban-rural breakdown used is based upon definitions adopted for use in the 1960 census, where the rural sector is comprised of farm and non-farm components.

The data in Table III-9 depict median money income for families.[27] These data can be used to explain the rural differentials between the nation and state and, in addition, they supplement the previous evidence concerning the incidence of poverty in the state. The difference in overall median money incomes is a product primarily of the difference in rural non-farm incomes. In 1960, the median current income of the rural non-farm family in Nebraska was 4,184 dollars, 566 dollars less than the national average.

The median money income of all families in Nebraska in 1960 was 4,862 dollars, nearly 800 dollars less than the national average. This is reflected in the proportion of families with money incomes less than 3,000 dollars which was 26.1 percent of the 365,800 families in the state. In contrast, only 21.4 percent of all families in the nation as a whole received less than this amount in 1960. The median level for urban residents was lower in the state than for the nation; however, the incidence of urban poverty as evidenced by incomes of less than 3,000 current dollars was less for Nebraska than for the United States.

Approximately one out of four Nebraska families received incomes of less than 3,000 current dollars, whereas approximately one out of

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[27] Unrelated individuals comprised 22 percent of the Nebraska total population in Table III-8 compared to 23 percent for the nation as a whole. In addition to persons who are unmarried, this group includes widows and widowers. For purposes of this admittedly terse treatment of income distribution, the comparison of family units was used. This circumvents defining more explicitly the poverty level in relation to family size and geographic place.

TABLE III-9

INCOME CHARACTERISTICS OF FAMILIES, NEBRASKA AND THE UNITED STATES, 1960

	Total	Urban	Rural	
			Farm	Non-farm
Nebraska				
Median Income[a]	4,862	5,828	3,243	4,184
Number of Families[b]	365.8	197.2	81.3	87.3
% Under $3,000	26.1	15.5	46.2	31.5
% Under $2,000	14.7	8.1	26.8	18.4
United States				
Median Income[a]	5,660	6,166	3,228	4,750
Number of Families[b]	45,128.4	31,940.0	3,332.5	9,855.9
% Under $3,000	21.4	16.4	47.1	28.9
% Under $2,000	13.1	9.4	32.2	18.4

[a] Current dollars of 1959 income reported in 1960.

[b] Thousands of families.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(1), 29(C), p. 164 and 1(C), p. 225.

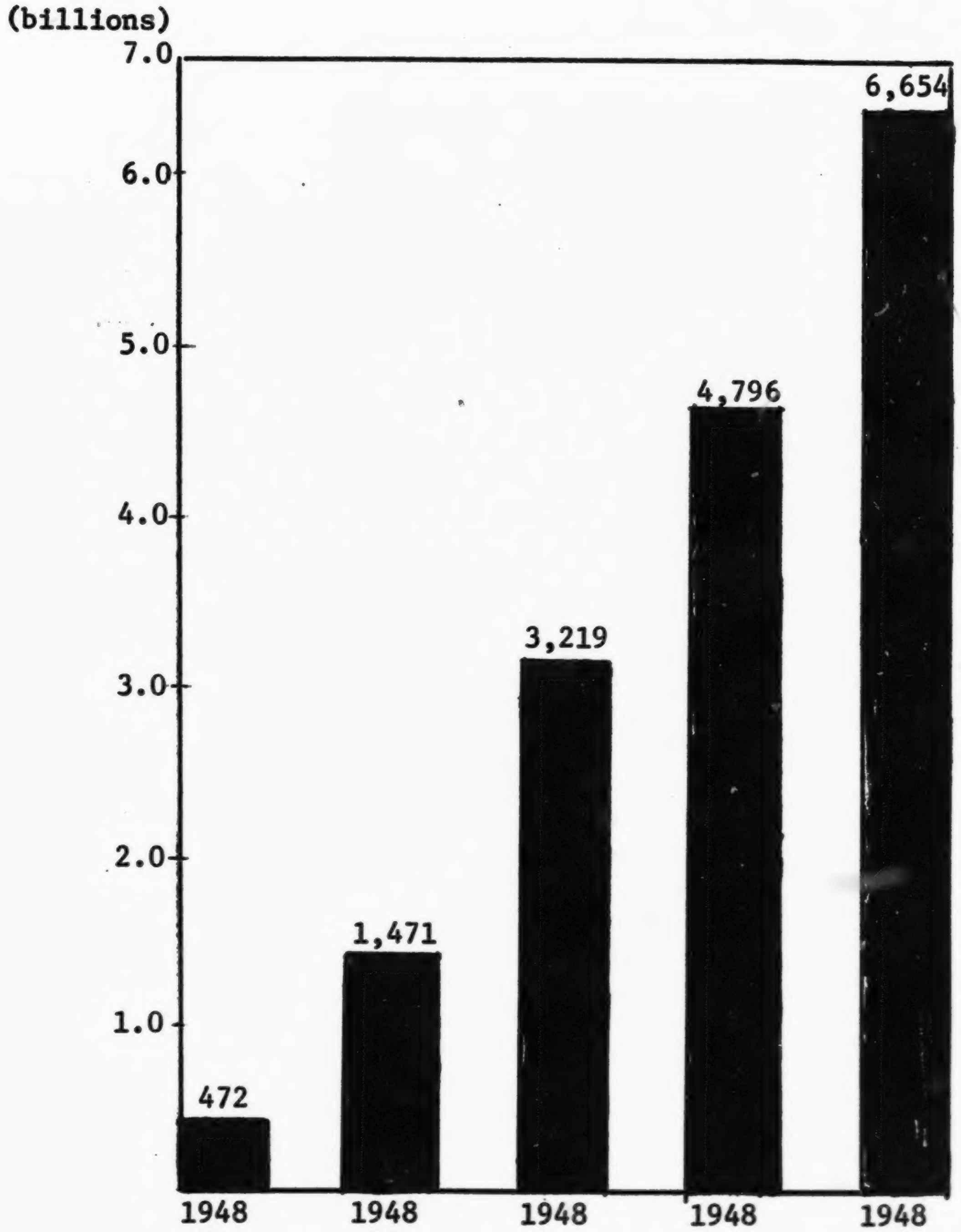
five families across the nation received incomes less than this amount. Of the 81,300 farm families in Nebraska, 46.2 percent received incomes of less than 3,000 current dollars in 1960 and 26.8 percent received incomes of less than 2,000 current dollars. This is comparable to the United States as a whole, except that (1) there is a greater share of rural families in Nebraska, and (2) the incidence of individual farm families receiving less than 2,000 dollars was higher for the nation, no doubt because of the South. Some 87,300 individuals were classified as rural non-farm in Nebraska and 31.5 percent of these families received 3,000 current dollars or less a year as compared to 28.9 percent for the nation.

Summary

The rate of economic growth in total and per capita income in Nebraska was larger from 1958 to 1963 than for the longer postwar period, 1948 to 1963. However, the state has not grown nearly as rapidly as the nation in a per capita or a total income context for either of these two periods. This is illustrated by Figure III-4. This figure depicts the cumulative gap in total personal income for various postwar periods beginning with 1948. The cumulative gap in real income from 1948 to 1963 (i.e., the income which Nebraska would have realized if the state economy had grown at a rate equal to the nation), is 6.7 billion dollars. The cumulative per capita income loss equals approximately 5,000 dollars per capita for the 1.4 million persons residing in Nebraska in 1963. When one combines this knowledge with the fact that the increase in the stock of human capital in the state (16.0 percent) from 1948 to 1963 was 13.1 percentage points below the national population growth rate, these trends are even more disturbing. Figure III-5 depicts the distribution of income. Between 1948 and 1963 wages and salaries increased from approximately 44 to 58 percent of Nebraska personal income and farm proprietor income decreased from about one-third to one-eighth of Nebraska personal income.

FIGURE III-4

CUMULATIVE TOTAL PERSONAL INCOME GAP IN NEBRASKA RELATIVE TO THE UNITED STATES[a]
(billions of 1957-59 dollars)

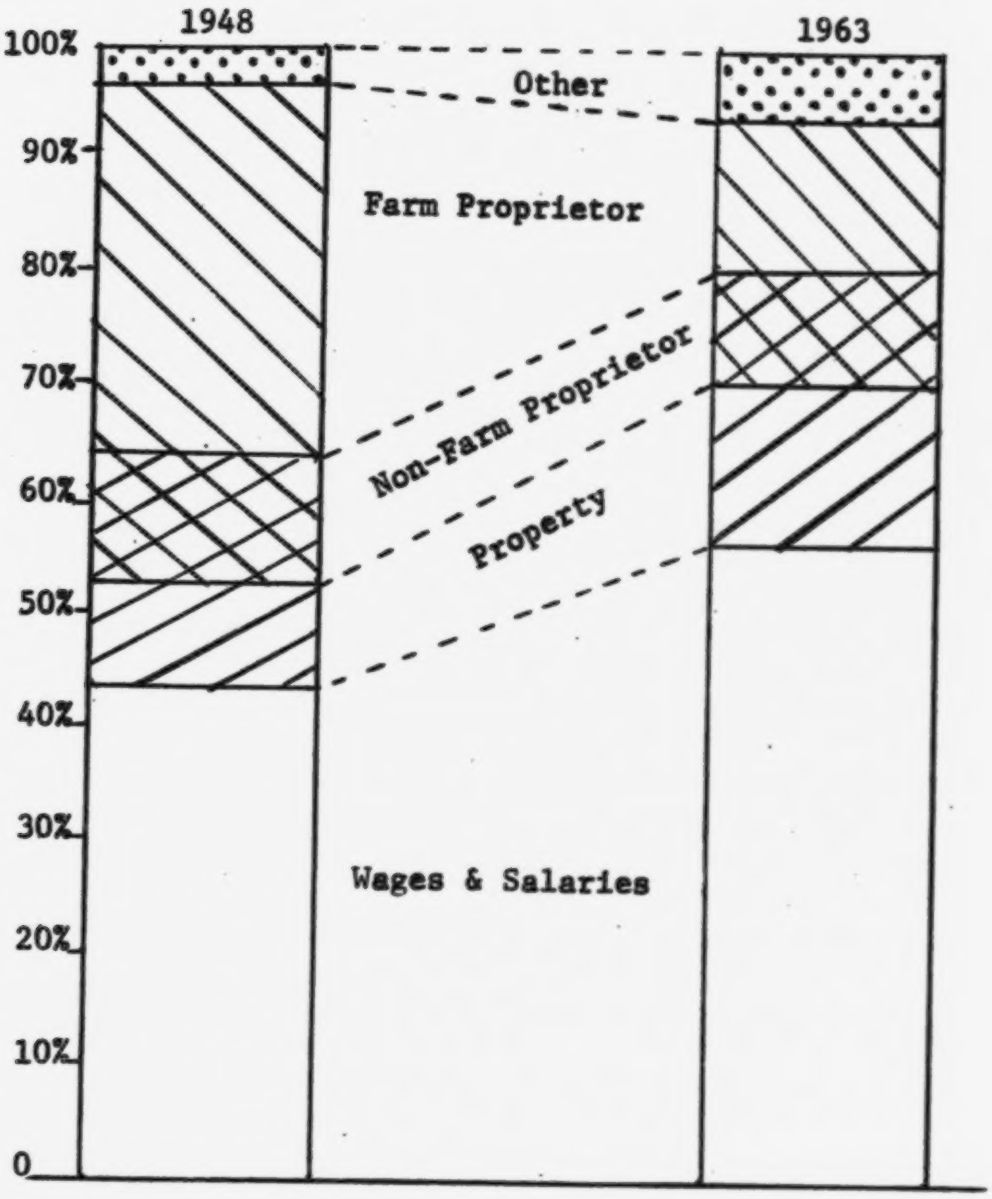


[a]This indicates the cumulative amount of additional total personal income that Nebraska would have realized if economic growth in the indicated period had occurred at the national rate.

Source: Tables A-13 and A-15 of the Appendix.

FIGURE III-5

DISTRIBUTION OF PERSONAL INCOME BY MAJOR COMPONENT IN NEBRASKA, 1948 and 1963



Source: Computed from Tables A-13 and A-17 of the Appendix.

Wage and salary sources of income have increased more rapidly in the state than in the nation recently, but property income has increased less rapidly and proprietors' income has declined appreciably in Nebraska while increasing slightly at the national level.[28] Total real income in Nebraska increased to 3.2 billion dollars in 1963, rising at an annual rate of 2.4 percent since 1948 compared to 3.8 percent for the nation. The rate of growth of per capita income was also larger in the nation than the state, by 0.5 percentage points between 1948 and 1963, and by 0.3 percentage points from 1958 to 1963. While the property and wage and salary income components both grew less rapidly in the state than in the nation over the 1948 to 1963 period, this growth differential was very small. The unfavorable growth differential in proprietors' income in average annual terms between Nebraska and the nation was -1.97 percentage points from 1948 to 1963, and a significantly larger -2.62 percentage points from 1958 to 1963. Declines in farm sources of proprietors' income account in large part for this growth differential between the nation and Nebraska. Farm proprietors' income also is the primary component in agricultural service income, which was observed to have declined sharply in postwar Nebraska.

Even though real personal income in Nebraska increased from 2.7 to 3.2 billion dollars in 1963, the performance of the Nebraska economy relative to the nation is poor. It must be recognized, however, that the state economy has been able to hold its own since the late 1950's with respect to total personal income growth. This is a favorable sign which, complemented by proper leadership and policies, may herald the approach of a pivotal point in the 1960's. At the same time the facts of the past will not be denied. Growth in total personal income in Nebraska from 1948 to 1963 lagged the nation by the growth gap equivalent of 695 million dollars for that latter year.[29] Over one-third of this growth gap reflects an area disadvantage.

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[28] While these income trends are subject to qualified interpretation because of the selection of a time period and income variations in the short run, analysis favors the use of 1948, 1958, and 1963 as comparison years.

In the comparatively short time period between 1958 and 1963 the growth gap between the state and nation was 148 million dollars, over two-fifths of which is the result of an area disadvantage. In both time periods the growth gap penalty attendant to the Nebraska economy is related to farm sources of proprietors' income. That is, the 1948 to 1963 growth gap in personal income of 695 million dollars was less than the growth gap in farm sources of proprietors' income of 834 million dollars and the 1958 to 1963 total gap of 148 million dollars was less than the growth gap in farm sources of proprietors' income of 222 million dollars. This means, of course, that other income components experienced upward shifts in income which offset what otherwise would have been even larger growth gaps in total personal income in Nebraska.

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[29] The growth gap is the differential percentage change in income of the state and nation applied to Nebraska income in 1948.

Analysis of sources of participation income by industry origin reinforced the farm income growth patterns noted above. Participation income from farming declined 26.5 percent from 1958 to 1963 in Nebraska, for example, while falling only 11.6 in the nation. Total participation income in Nebraska increased 30.1 percent compared to a national increase of 66.2 percent between 1948 and 1963. This trend has diminished of late, although participation income in the nation increased 8.8 percentage points more than it did in Nebraska between 1958 and 1963. Analysis of the relative importance of industry sources of participation income revealed that Nebraska was more heavily specialized in agriculture relative to the nation in 1963 than it was in 1948. Data also reveal that Nebraska relied upon farm sources of participation income far less in 1963 than in 1948 when 39.8 percent of Nebraska participation income was generated in agriculture compared to 17.1 percent in 1963. Tendencies in the direction of greater relative specialization also appeared for the transportation, trade and construction industries.

Manufacturing and to a lesser extent the government, service, and communication sectors are under-represented as sources of income in Nebraska when compared to the nation. All have grown as a share of total participation income in Nebraska, but they remain less important to the state than they are nationally. Overall specialization has declined in Nebraska relative to national specialization patterns. This is largely a result of the very large decline in the relative proportion of participation income supplied by farming, which declined from 39.8 to 17.1 percent of total participation income over this 15-year period.

Some industry sectors grew rapidly, while others contributed to the growth problems of the state. Between 1948 and 1963, those industries at a competitive disadvantage as measured by participation income were agriculture, trade, transportation, services, and government. Other industries, led by manufacturing, narrowed the state area disadvantage to 97 million dollars as they exhibited an area advantage. From 1958 to 1963 the agricultural income situation did not improve, but trends in the trade sector were reversed and this sector exhibited an area advantage. Downward shifts in the mix effect occurred in agriculture (777 million dollars), trade (51 million dollars), and transportation (48 million dollars) to contribute to the net growth gap of 685 million dollars from 1948 to 1963 for the state as a whole. While data do reveal an area disadvantage for agricultural sources of income, the amount is not extremely large. In addition, it must be remembered that the selection of beginning and terminal years may be a factor in this area disadvantage.[30] Furthermore, corporate farm income is excluded from these data. What is significant is (1) that Nebraska is not exhibiting an area advantage in this sector as might be expected and (2) the dominant size of the downward shifts of the mix-type in agriculture. Technological improvements during the postwar era have increased total gross output in agriculture and have enlarged the opportunity for the state to add industries ancillary to agriculture, but these same production efficiencies have severely penalized the state economy and greatly reduced the importance of agriculture as a source of net income. The existence of a sizable growth gap is evidence of the fact that other economic sectors simply cannot expand enough to absorb this impact.

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[30] This is demonstrated in part by the farm income data analyzed in Chapter V. These data do confirm the fact that, at best, Nebraska farm income performance is only equal to national performance.

Family income data reveal a large urban and rural-farm median income differential between Nebraska and the nation. In addition, the money income of families and unrelated individuals increased more rapidly in the nation than in the state from 1950 to 1960. Income increases for families and unrelated individuals in rural areas in Nebraska were over 40 percent less than the national increase of 92.7 percent. A larger proportion of this population had incomes of less than 3,000 current dollars in 1960 and 1950 in the state than in the nation. Nearly one-third (32.2 percent) of all rural farm families had incomes less than 2,000 current dollars in the nation compared to 26.8 percent in the state; however, families under this income level were more nearly equally distributed in urban areas and equally as prevalent for rural non-farm residents in the two economies. As a consequence of the larger proportion of rural families in Nebraska, 14.7 percent had income less than the 2,000 current dollar minimum compared to 12.1 percent in the nation. In summary, rural non-farm families enjoy larger median incomes in the nation; the urban income differential is small, favoring the nation; and rural families in the state and nation enjoy nearly equal incomes. Data also indicate that incomes under 3,000 and 2,000 current dollars are generally more probable in the state than they are in the nation, particularly because of the Nebraska rural farm group which constitutes a larger relative proportion of the state population.[31]

These income data do depict the costs of the poor economic performance of Nebraska growth as compared to national patterns of growth in the postwar period. The growth gap is large, and this has had very serious implications for the future. At the same time, patterns of change since the late 1950's have been moderately favorable as the state's performance has kept pace with national trends, which has the effect of maintaining the growth gap at a level created earlier. The guarded optimism that this comparatively short-run trend permits is reduced even further when these data are viewed in light of income growth patterns observed over the entire century in Chapter II, even when one recognizes that preliminary income data from 1964 to 1966 are favorable.

Given the income circumstances described in the preceding pages for the postwar era, the immediate question which is raised relates to the reaction of the population to these trends. Therefore, we turn our attention next to recent changes in human resource growth patterns.

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[31] This is indicated by the fact that the percent of all families with incomes below these levels is greater in Nebraska than in the nation even though a larger percentage (of a smaller number) of families in the nation receive incomes below these levels.

CHAPTER IV

THE SUPPLY OF HUMAN RESOURCES

It is frequently alleged that the movement of people is a responsive indicator to changing economic and social conditions. It was observed previously that Nebraska has experienced a considerable amount of net out-migration and sluggish population growth patterns throughout this century, particularly in recent decades.[1] As a consequence of the large human capital disinvestment which occurred, the resource base and growth in the state was very inferior to national economic growth. The purpose of the analysis which follows is to examine the current applicability of these conclusions which were based upon trends that appeared in data from 1890 to 1960. This is accomplished by (1) measuring in detail the composition of the population and examining labor force trends in recent years; (2) studying population migration and mobility in the postwar era; and (3) portraying selected key urbanization and intra-state patterns of population movement.

Recent Growth in the Population and Labor Force

Population growth patterns. Figure IV-1 depicts population changes in the state from 1948 to 1963. The Nebraska population increased

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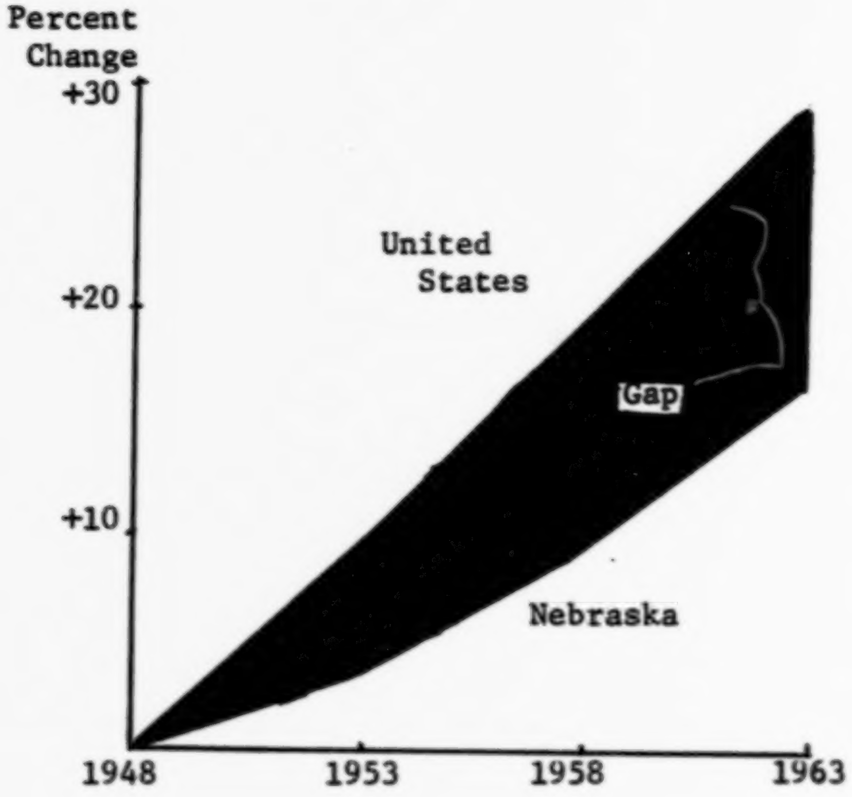
[1] See Chapter II.

16.1 percent between 1948 and 1963, compared to a 29.0 percent increase for the nation over the same period. This remains a substantial growth differential compared to the national average, although the growth gap is not as severe as it was over the 1890 to 1960 period considered earlier. Between 1960 and 1963 the average annual rate of population growth for the nation was 1.6 percent, compared to 1.2 percent for the state of Nebraska. This is in sharp contrast to an

FIGURE IV-1

PERCENTAGE INCREASE IN POPULATION,
1948 to 1963



Source: Table A-19 of the Appendix.

average annual rate of growth of 1.7 percent for the nation and 0.6 percent for the state between 1950 and 1960, for example.[2] Nebraska comprised 0.87 percent of the nation's total population in 1948. In 1963, the Nebraska population of 1,468,000 persons had declined to 0.78 percent of the nation's total population.

The age composition of the Nebraska labor force and recent changes in the labor force differ from national patterns. Growth in the Nebraska population appears to be a consequence of expansion in the 14-and-under and 65-and-over age categories, both of which increased rapidly over the 1950 to 1960 decennial period.[3] This is reflected, in part, in the dependency ratios of the Nebraska (and national) population over this period of time.[4] The dependency ratio for Nebraska was 36.4 percent in 1950 and 42.3 percent in 1960. The dependency ratio for the United States as a whole was smaller in both years, 35.2 percent in 1950 and 40.2 percent in 1960. These ratios indicate that the Nebraska population has a greater proportion of its people in dependent age groups relative to the nation, and that the state-national differential in the dependency ratio has increased. This difference in population growth patterns between Nebraska and the nation is brought to the foreground when one recognizes that, while the total Nebraska population increased by 6.4 percent or 85,000 persons in the 1950 to 1960 decade, the working-age population decreased by 23,000 persons.[5] In contrast, the working-age population increased slightly at the national level. In short, growth in the Nebraska population between 1950 and 1960 was derived only from increases in dependent age categories.

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[2] It was noted earlier that the average annual rate of population growth for the state of Nebraska was approximately one-third the average national growth rate between 1890 and 1960. These recent growth trends, while unfavorable relative to national performance, do show improvement relative to the past trends.

[3] For further data see Table IV-3.

[4] The dependency ratio is the percent of the population over 65 and under 14 years of age.

The labor force and population. These and related trends are depicted by the data contained in Table IV-1, which also portray the employment status of the Nebraska population for the years 1940, 1950, and 1960. The total population over 14 years of age has declined over this period of time to a total of 996,300 persons in 1960. The labor force, however, has increased from 501,000 in 1940 to 556,400 persons in 1960. The population participating in the labor force in 1960 was 55.9 percent, up 6.2 percentage points since 1940 in the state of Nebraska. The male population over 14 years has declined by approximately 20,000 individuals since 1940, most of this decline coming between 1940 and 1950. The male labor force has also declined over this period of time, but most of this came about between 1950 and 1960 as Table IV-1 indicates. The female population, which increased between 1940 and 1950, has not increased nearly as rapidly as the female labor force in the state, a trend paralleled at the national level.

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[5] This includes the number of persons between the ages of 14 and 64 years.

TABLE IV-1

EMPLOYMENT STATUS OF THE NEBRASKA
POPULATION, 1940, 1950, and 1960
(thousands of persons)

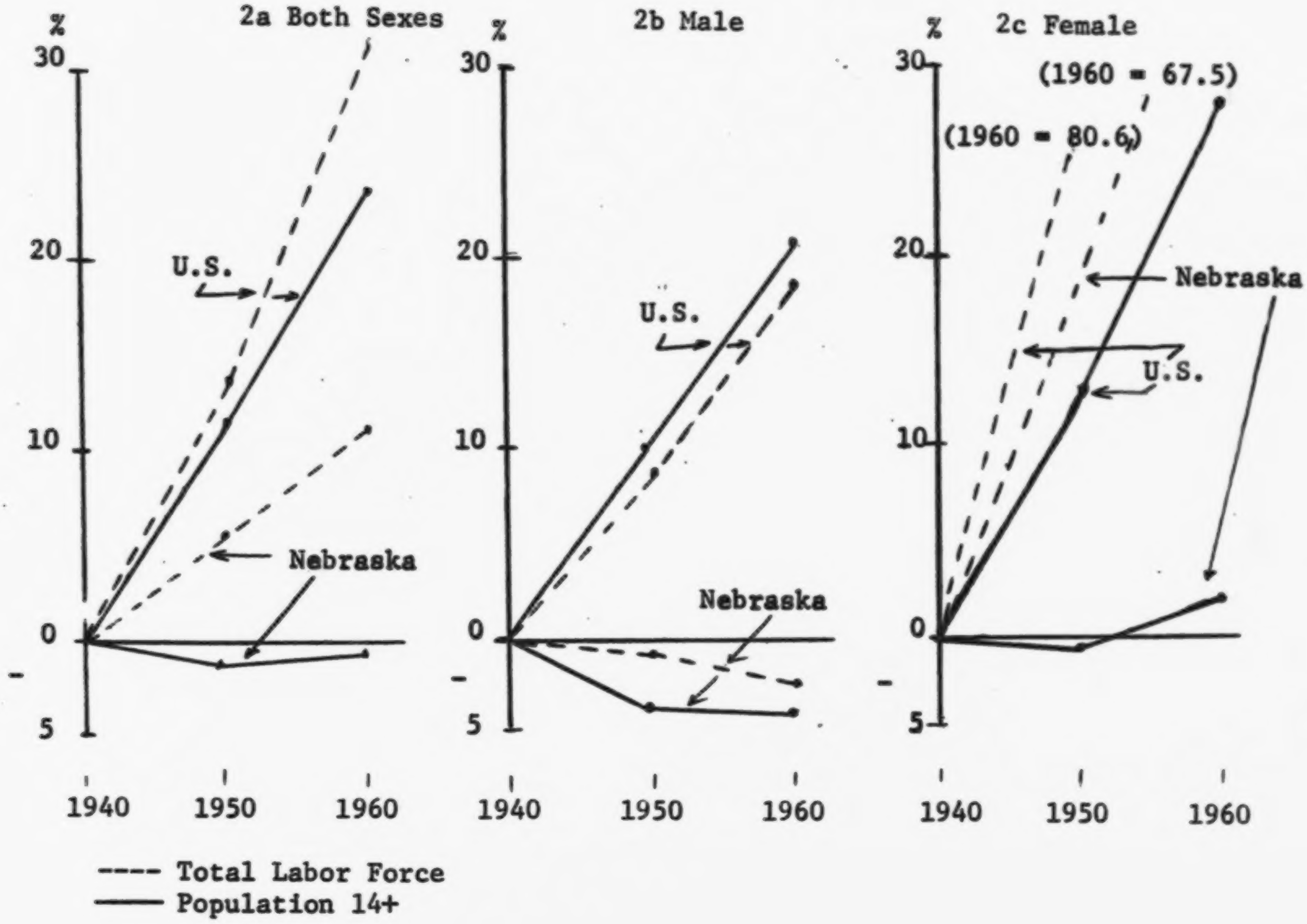
	1940	1950	1960
Total Population (14+)	1,008.5	995.8	996.3
Labor Force	501.0	526.8	556.4
Percent of Population	49.7	52.9	55.9
Male Population (14+)	508.9	488.8	488.1
Male Labor Force	400.4	397.5	388.1
Female Population (14+)	499.6	498.4	508.1
Female Labor Force	100.6	128.6	168.5
Armed Forces	1.7	3.4	13.8
Civilian Labor Force	499.3	523.3	542.7
Unemployed: (Number)	67.6	11.7	16.7
Unemployed: (Percent)	13.5	2.2	3.0

Source: U.S. Department of Commerce, Bureau of the Census, _Census of Population_: _1960_, PC(1)-29C, p. 29-155.

These population and labor force growth patterns in the state of Nebraska are surprisingly different from changes in the nation in recent years. Figure IV-2 graphically depicts selected percentage changes in the population and labor force since 1940. Figure 2a indicates that between 1940 and 1960 the Nebraska labor force increased 11.1 percent. The total population over 14 years of age, however, decreased 1.2 percent over this 20-year period. These growth trends stand in bold relief to those depicted in Figure 2a for the United States, where the population increased 24.4 percent and the labor force 31.9 percent over

FIGURE IV-2

PERCENT CHANGE IN LABOR FORCE AND POPULATION OVER 14 YEARS OLD SINCE 1940, BY SEX, NEBRASKA AND THE UNITED STATES



Source: Table IV-1, and U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(1)-1C, p. 1-214.

these two decennial periods. The solid lines in Figures 2b and 2c indicate that the population decline of persons over 14 years of age is primarily a result of a decline in the male population, although the female population admittedly added little to total growth for the state of Nebraska. The Nebraska male population over 14 years of age has declined 4.0 percent since 1940, while the labor force has declined 3.1 percent over this same period. The contrast of this growth pattern to national growth trends is pointedly demonstrated in Figure 2b.

Analysis of population growth in age categories over 14 years old presents a pessimistic picture unlike the analysis of data for the total population in Nebraska. While past trends are unfavorable, the potential labor force and population of the state of Nebraska is enhanced by the fact that there are a substantial number of persons under the age of 14 years in the state.[6] One critical problem of the future for Nebraska is preventing the out-migration of this potential human capital. At the same time, however, mobility is frequently in the best interests of migrants, particularly when the economic future of out-migrants can be enhanced by movement. While reconciliation of this development is not attempted here, more complete measures of the movement of human capital are in order.

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[6] In 1960, 30.1 percent of the Nebraska population was 14-and-under compared to 31.1 percent for the nation.

Migration and the Supply of Human Capital

Analysis of population trends over the course of the Twentieth Century revealed that cumulative net out-migration from Nebraska since 1890 totaled 785,000 persons. The total population loss, derived by subtracting the actual population from the estimated potential population (assuming national growth rates) over this same time period was estimated at 1,601,000 individuals.[7] The difference of 816,000 persons reflects the cumulative natural increase lost because of net out-migrants over the seven-decade period.[8] It was also noted that the population problem increased in severity after 1930, as the net out-migration rate approximated 10 percent of the average population in each of the last three decades. Total net out-migration was estimated at 425,000 persons and the total population gap at 587,000 persons between 1930 and 1960 alone. Because of the severity of this trend and its importance to economic viability in the state, an examination of postwar migration trends is necessary.

Net migration and population changes. While population growth has been meager recently, there have been marked changes in the Nebraska resident civilian population between 1945 and 1963, including the rate of net out-migration. These data are presented in Table IV-2. Net migration is estimated on a basis different from that used in Chapter II, and the population excludes all non-residents and military personnel.[9] The use of more current data and an alternative estimating procedure is desirable because of the severity of the depopulation trends and their relation to economic viability.

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[7] See Tables II-1 and II-3.

[8] To the extent that they exist, differential natural rates of increase also may be a factor.

These data are cumulated in Table IV-2, where the sum of the natural increase (353,000) and net civilian-military movement (82,000), less the net population change (280,000) is equal to net out-migration. Between 1945 and 1963 net out-migration from Nebraska is estimated at 154,000 persons, most of which occurred from 1950 to 1958. The growth gap in the Nebraska population between 1945 and 1963 equals 254,000 persons. About 60 percent of this gap is due to persons who left the state in this period. The remainder (100,000 persons) represents potential population lost because of a reduced natural increase stemming from net out-migration.[10] These developments reduced the population

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[9] Table IV-2 is based upon the estimating methodology currently used by the Census Bureau Method II and therefore will not agree with the estimates developed earlier which were based upon survival rates. For an explanation of Method II see U.S. Department of Commerce, Bureau of the Census, _Current Population Reports_, Series P-25, No. 133. Estimated net out-migration between 1940 and 1950 using Method II was 124,000 persons, some 18,000 persons less than were estimated by the survival rate method. Method II also was more conservative in the 1950 to 1960 decennial period in that net out-migration was estimated at 121,000 persons compared to 129,000 estimated net out-migrants obtained by the census survival rate method of Chapter II.

[10] This assumes that the rate of natural increase in Nebraska does not differ greatly from the national rate. This is substantiated by existing data, where the rate of natural increase for Nebraska in 1950, 1960, and 1963 was 1.46, 1.43, and 1.25 persons per hundred respectively. The national rates were slightly less, or 1.45, 1.42, and 1.20, for these same three years. See U.S. Department of Commerce, Bureau of the Census, _Statistical Abstract of the United States: 1965_.

TABLE IV-2

NET OUT-MIGRATION OF THE NEBRASKA CIVILIAN POPULATION, AND COMPONENTS OF CHANGE, 1945 to 1963
(thousands of persons)

	1945-50	1950-54	1954-58	1958-63	Cumulative Change
Net Population Change	154	10	38	78	280
Births	144	141	135	171	591
Deaths	60	55	53	70	238
Natural Increase	84	86	82	101	353
Civilian-Military Moves[a]	91	- 18	6	3	82
Net Migration[b]	- 21	- 58	- 50	- 25	-154
Lost Potential[c]					-100
TOTAL GAP					-254

[a] Movement (net) from the military to civilian life.

[b] The net population change, less the sum of natural increase, plus civilian-military moves.

[c] Based upon the percentage differential civilian resident population change between 1945 and 1963 multiplied by the 1948 Nebraska population (1,168,000 to 1,448,000 for Nebraska and 128,112,000 to 186,626,000 for the nation).

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, P-25, No's. 72, 272, 284, and 304.

increase of 200,000 persons in Nebraska to one-half of what it otherwise would have been. The increase of population of 280,000 persons includes the effects of de-militarization of 82,000 persons in the postwar era.

It is difficult and hazardous to determine the direction of net out-migration trends from the scanty data in Table IV-2 alone. Cumulative losses related to the changing age structure of a population, the age selectivity of migration, and the changing economic structure of an economy are but a few of the factors which influence present and future migration patterns. However, the data from Table IV-2 do indicate one recent favorable development: net out-migration diminished in severity from 1958 to 1963 in comparison to the two earlier periods in the decade of the 1950's. While these limited data are not adequate enough to draw firm conclusions regarding the future, they tend to be moderately optimistic. In contrast, earlier analyses of net out-migration patterns over the entire postwar period, and particularly since 1930, were anything but favorable.

The age effect of migration. Previous analysis of out-migration by age category indicated that the incidence of out-migration was heaviest in working-age groups.[11] Approximately 50 percent of all net out-migrants between 1950 and 1960 were estimated as being in the 25 to 44 age group, and another 27 percent were "passive" migrants; i.e., persons under 15 years of age who moved with family units. Age selectivity in net out-migration patterns is important because of its relation to future demographic trends and because of the secular increase in educational attainment which has characterized most economies in the postwar period. Higher dependency ratios in the state than the nation also have been observed previously. There is a tendency for the dependency ratio of an area population to rise as the younger, more mobile population leaves the area. Alteration of a population age structure is also evidenced by average age data. In 1960, the average age was 30.2 years in Nebraska compared to 29.5 years for the nation. Depopulation also relates to educational attainment in that the incremental loss of human capital exceeds the average capital investment in human beings in the area economy as the younger, out-migrating population normally has an educational attainment level in excess of the average.

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[11] This conclusion was based upon the survival rate method of estimating migration. The 25 to 44 age category accounted for 52,700 of total net out-migration of persons over 10 years of age (106,100) between 1950 and 1960. Approximately one-half of all net out-migrants over the period 1890 to 1960 were in this age category, and over two-thirds of all net out-migrants were between 15 and 44 years of age.

Table IV-3 portrays migration flows by age category for the five-year period, 1955 to 1960. Net out-migration was 61,500 persons over this time period for all age groups. The net out-migration level for persons between the ages of 15 and 44 years averaged 6.1 percent of the population in this age group for this five-year period, a level of net out-migration twice as large as that for persons between the ages of 45 and 64 years, and three times as large as the level for persons over 65 years of age. The absolute amount of net out-migration is concentrated in the younger age groups, as only 12,700 of the 61,500 net out-migrants were over 45 years of age.

The data above confirm the currency of earlier conclusions regarding the age incidence of net out-migration from Nebraska. More important, Table IV-3 depicts the gross inflow and outflow of the

TABLE IV-3

NEBRASKA MIGRATION BY AGES, 1955 to 1960
(thousands of persons)

Age Group	Gross Out-Migrants		Gross In-Migrants		Net Migration	
	Number	Percent[a]	Number	Percent[a]	Number	Percent[a]
1955 to 1960						
0-14	42.1	9.7	25.3	5.8	-16.8	-3.9
15-24	38.9	21.3	27.8	15.2	-11.1	-6.1
25-44	63.5	18.7	42.6	12.5	-20.9	-6.2
45-64	20.4	7.1	11.2	3.9	- 9.2	-3.2
65+	7.9	4.8	4.4	2.7	- 3.5	-2.1
Total	172.8	13.9	111.4	9.0	-61.5	-4.9

[a] Percentage data relate to the 1960 population. Data are based upon the census question, "Where did you live on April 1, 1955?" Three major sources of bias are (1) multiple movement during the five-year period, (2) deaths of migrants during the period, and (3) unreported and unrecorded movement. These limitations tend to understate gross migration but net migration probably is not significantly affected.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(2)-2B, p. 128.

Nebraska population. A considerable amount of gross migration is indicated by these data. Gross out-migration totaled 172,800 persons and gross in-migration was 111,400 persons over a five-year period. There are wide differential rates of movement by age group, just as there were for the net out-migration patterns. Gross in-migration in the 15 to 24 age group, for example, was 15.2 percent, compared to 3.9 percent for the 45 to 64 age category.

Of the 172,800 persons who migrated to other states between 1955 and 1960, 84 percent were below 45 years of age and a similar proportion of all in-migrants were below this age. The age structure of the state's population cannot help being affected adversely by out-migration such as Nebraska has experienced in recent years. Table IV-4 portrays population growth by age category from 1940 to 1960 and from 1950 to 1960 for the nation and state.

TABLE IV-4

PERCENT POPULATION CHANGE BY AGE CATEGORY, NEBRASKA AND THE UNITED STATES, 1940 to 1960 and 1950 to 1960[a]

Age Group	1940 to 1960		1950 to 1960	
	Nebraska	United States	Nebraska	United States
10-13	14.1	49.5	36.4	55.4
14-24	-20.5	1.0	- 5.1	9.7
25-44	- 8.2	17.6	- 6.7	3.2
45-64	55.3	83.2	25.9	34.7
Total[a]	0.0	26.5	2.7	15.1

[a] 10 years old and over.

Source: Tables A-9 and A-10 of the Appendix.

The severity of the incidence of net out-migration upon population growth is illustrated by these data. For example, the Nebraska population aged 14 to 24 has declined 20.5 percent since 1940 and 5.1 percent since 1950. During these same time periods, the nation experienced increases of 1.0 and 9.7 percent in this age group. The overall rate of increase in the Nebraska population has lagged the nation considerably as that population growth which has occurred in Nebraska is the result of increases in the population under 14 and over 65 years of age. Even at this, the Nebraska population over 10 years of age did not increase from 1940 to 1960 while increasing 35.6 percent for the nation. The Nebraska population between 14 and 65 years of age actually contracted from 1940 to 1960 and from 1950 to 1960 as the data in Table IV-2 and Figure IV-2 illustrated. Perhaps the age impact of population changes in Nebraska is best illustrated by the 61,500 net out-migrants between 1955 and 1960, two-thirds (41,200) of whom were between the ages of 14 and 64 years, while 90 percent of the remainder were children under 14 years of age.

The geographic incidence of migration flows. The flow of migration to and from the state of Nebraska follows decided geographic patterns. Figure IV-3 portrays migration streams on a regional basis for Nebraska during the period 1955 to 1960.[12] Nearly one-half of all gross out-migration (85,570 persons) represented departures for destinations in the Pacific and Mountain states. Another 45,595 gross out-migrants left for states in the immediate area

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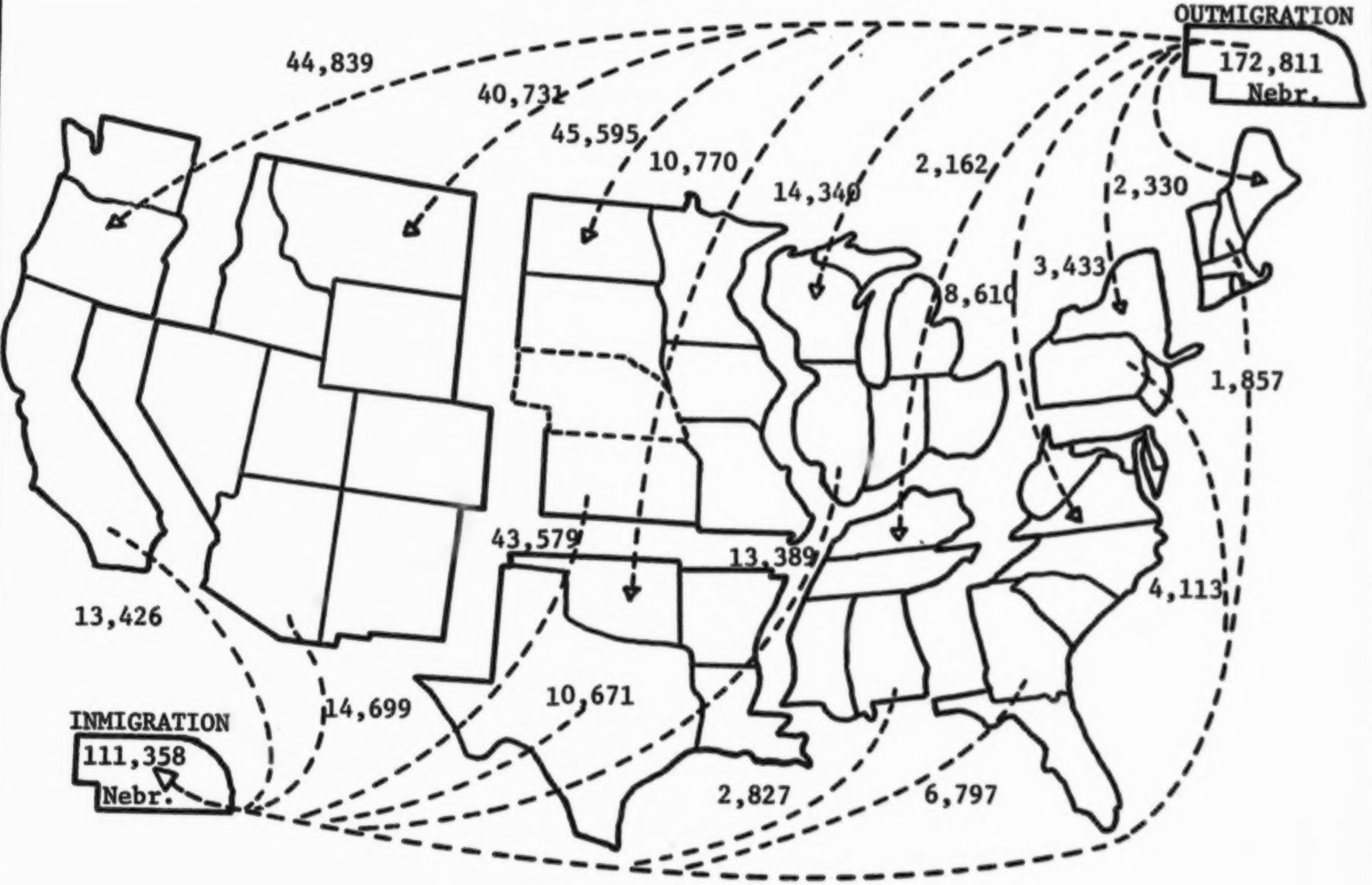
[12] The regional breakdown employed is that of the United States Bureau of the Census. For more detail on these areas, see U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1964*, pp. xii ff.

FIGURE IV-3

MIGRATION STREAMS TO AND FROM NEBRASKA, 1955-60


OUTMIGRATION
172,811
Nebr.
44,839
40,731
45,595
10,770
14,340
2,162
2,330
3,433
8,610
1,857
43,579
13,389
4,113
13,426
14,699
10,671
INMIGRATION
111,358
Nebr.
2,827
6,797

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, Vol. II, PC(2)-2B, pp. 72-7.

(the West North Central region), 14,340 moved to the East North Central states, and 10,770 migrated to the West South Central region. Migration into Nebraska from other regions totaled 111,358 persons, 43,579 coming from states in the West North Central region. The Pacific, Mountain, West South Central, and East North Central regions each supplied between 10,000 and 15,000 in-migrants into Nebraska.

The net out-migration which Nebraska experienced in this five-year period benefited the Western regions in the United States primarily. The Pacific states received a net influx of 31,413 persons, or 51.1 percent of all net out-migrants from Nebraska, and the Mountain states experienced a net influx of 26,032 persons, 42.4 percent of net out-migration from Nebraska. Together, the population of these two regions increased by 57,445 persons, by far the majority of the 61,453 Nebraska net out-migrants. Actually, over 85,000 Nebraskans left the state destined for these two regions in this five-year period, but Nebraska received approximately 27,000 in-migrants from the Pacific and Mountain states. Net out-migration also occurred from Nebraska to states within the West North Cental region in the amount of 2,061 persons. Net out-migration to the South Atlantic states was 1,813, while the Middle Atlantic and East South Central states were actually population suppliers; i.e., sources of net in-migration to Nebraska.

The geographic redistribution of population resulting from the differences between these population streams is presented in more detail in Table IV-5 for the 1935 to 1940 and 1955 to 1960 periods.

TABLE IV-5

PERCENT DISTRIBUTION OF MIGRATION TO AND FROM NEBRASKA BY REGION, 1935 to 1940 and 1955 to 1960[a]

Area	Migration 1935 to 1940[c]			Migration 1955 to 1960[c]		
	In	Out	Net Out	In	Out	Net Out
West N. Central[b]	58.3	24.0	5.0	39.1	26.4	3.3
East N. Central	9.2	8.1	7.4	12.0	8.3	1.5
Mountain	16.2	22.4	25.7	13.2	23.6	42.4
Pacific	5.5	37.2	55.2	12.1	25.9	51.1
South Atlantic	1.4	2.0	2.4	6.1	5.0	3.0
West S. Central	5.9	4.0	2.8	9.6	6.2	0.2
East S. Central	1.0	0.6	0.3	2.5	1.3	1.0[d]
New England	0.5	0.3	0.2	1.7	1.3	0.8
Middle Atlantic	2.0	1.4	1.1	3.7	2.0	1.1[d]
	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	58,605	165,253	106,648	111,358	172,811	61,453

[a] Data may not add due to rounding.

[b] Excludes population movement within Nebraska (117,195 for 1935 to 1940 and 121,030 for 1955 to 1960).

[c] Data are based upon residence in 1960 (1940) of all migrants by residence in 1955 (1935).

[d] Denotes in-migration to Nebraska and must be subtracted column in order that the column might add to 100 percent.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(2) 2B, pp. 72-7; and Census of Population: 1940, Internal Migration, 1935 to 1940, pp. 27-118.

Migration data are analyzed in terms of the percentage distribution of migration by regional flow and are net of all intra-state moves in Nebraska. The heavy concentration of Nebraska residents who left for states in the Pacific and Mountain regions between 1955 and 1960 is demonstrated by the last two columns of this table. States within these two regions attracted 49.5 percent of all gross out-migrants, nearly twice as many as did the West North Central area. On balance, about 93 out of every 100 net out-migrants, 50 of every 100 gross out-migrants, and 25 of every 100 gross in-migrants involved a population exchange with states in the Pacific or Mountain regions. Included in these regional exchanges is gross out-migration from Nebraska to California in the amount of 33,070 persons, resulting in a net loss of 23,734 persons after accounting for migration into Nebraska from California.[13] Colorado was the major state in the Mountain region which attracted Nebraskans, as net out-migration to this state totaled 14,951 persons. Washington also served as a net destination state for 3,723 Nebraskans. Together, these three states account for more than two-thirds of all net out-migration in this period. Net out-migration between 1935 and 1940 was larger in an absolute sense than it was in the 1955 to 1960 period. Again, both the gross and net flows were heavily concentrated in states in the Pacific and Mountain regions. Table IV-5 indicates that approximately four of every five net out-migrants from Nebraska in the 1935 to 1940 period represented a source of population growth to states in the Pacific and Mountain regions.

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[13] See Table A-20 of the Appendix for additional data on population flows between states.

About one-fourth of the gross outflow of the Nebraska population between 1955 and 1960 was in the immediate area, the West North Central region. Kansas and Iowa attracted 10,467 and 17,074 Nebraskans respectively during this period, but gross in-migration from these two states totaled 27,442 persons. As a consequence, there occurred a very modest net population exchange between these three states. These same general patterns characterize population movement within the West North Central area in the 1935 to 1940 period. In both periods, Nebraska in-migrants were derived largely from residences in the West North Central region. The net change in population between Nebraska and other states in the region was modest, but to Nebraska's net disadvantage in both periods. The remaining in-migration was fairly evenly distributed among states in the East North Central and regions other than those in the East and Southeastern United States. While in-migration to Nebraska from the West North Central and Mountain states between 1935 and 1940 was somewhat more concentrated than from 1955 to 1960, the general sources of population have not changed dramatically. The most striking difference is that of the Pacific states, which supplied 5.5 percent of all in-migrants in the 1935 to 1940 period compared to 12.1 percent from 1955 to 1960.

Nebraska has participated in the national trend of rising mobility in recent decades, both as a recipient and a supplier of human resources.[14] Data examined thus far indicate that this participation has been detrimental to the state retention and accumulation of a human capital stock, but the relative strength or weakness of population exchange has not been exposed. Because migration relates to population flows in other areas, it is helpful to examine the relative intensity of these flows.

Migration intensity. Migration from state to state varies greatly and, in this way, it does bear heavily upon the market access characteristics of a region's economy. Analysis of migration coefficients (Table IV-6) reflect the movement between selected states which comprise the heavy migration exchange states with Nebraska between 1955 and 1960. Examination of these coefficients relates migration and mobility patterns in Nebraska to population patterns in other states. The "draw" coefficient of Table IV-6 is a measure of gross in-migration as a percent of the 1960 population in each state, and the "loss" coefficient is a measure of the rate at which an area's residents are enticed away, i.e., gross out-migration as a percent of the 1960 population. The turnover factor is the sum of these two coefficients; i.e., it is total inter-state migration as a percent of the average population over five years of age in the area.

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[14] See U.S. Department of Labor, Mobility and Worker Adaption, pp. 19-29, for an excellent discussion of national mobility patterns.

TABLE IV-6

MIGRATION COEFFICIENTS FOR MAJOR POPULATION TRANSFER STATES, 1955 to 1960

States	Draw Ratio[a]	Loss Ratio[b]	Turnover Factor	Holding Power[c]	Retention Factor[d]
Nebraska	.090	.138	.228	.65	--
Iowa	.061	.100	.161	.61	1.06
Missouri	.086	.102	.188	.84	.90
Kansas	.117	.157	.274	.75	.90
Colorado	.185	.144	.329	1.28	.32
California	.142	.058	.200	2.45	.28
Texas	.082	.084	.166	.98	.87
Illinois	.070	.083	.153	.84	.90
Minnesota	.067	.076	.143	.88	.63
South Dakota	.089	.152	.241	.59	1.12
Washington	.130	.117	.247	1.11	.35
Wyoming	.195	.216	.411	.90	.56

[a] Gross in-migration as a percent of the 1960 population over five years of age.

[b] Gross out-migration as a percent of the 1960 population over five years of age.

[c] Draw coefficient divided by loss coefficient.

[d] Gross in-migration divided by gross out-migration from Nebraska to row state.

Source: Table A-20 of the Appendix and U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(2) 2B, Mobility for States and State Economic Areas, pp. 40-63, 64, and 72-77.

In general, a high draw coefficient is indicative of relatively strong attraction forces, numerous re-entrants to the state, or some combination of these two elements. The range of variability, influenced in part by the base population of a state, is considerable in these coefficients. Nebraska generally compares unfavorably with population expanding states in terms of this measure (e.g., Colorado), although Nebraska is not markedly different from several neighboring states.

A high loss coefficient typifies some degree of inability to curb migration flows to other states. Nebraska and Kansas, with loss coefficients of .138 and .157 respectively, are illustrative of high population loss areas. There are exceptions to this generalization such as Colorado, with a loss factor of .144. This may be a reflection of large amounts of previous in-migration.

The turnover factor varies from a high of .411 for Wyoming to a low of .143 for Minnesota. High turnover factors exist for net out-migration states (Kansas) as well as for states experiencing considerable net in-migration (Colorado). Nebraska has a relatively "average" rate of turnover. Low turnover factors probably tend to indicate some population maturity and greater relative immobility for a state. The size of the turnover factor indicates any of several possible developments, including large and disrupting structural changes in a state's economy, the changing age structure of a population, the relative mobility of a population, and the several factors affecting mobility (e.g., the urban-rural population distribution and occupational levels).

The ability of a state to maintain its in-migrants and effect a net population influx relative to other states can be measured by the ratio of the draw coefficient to the loss coefficient for each state. This coefficient is a measure of a state's "holding power." A coefficient greater than unity indicates relative net in-migration and a superior ability to attract population, whereas a value less than unity reveals relative population exporting. The Nebraska holding power ratio is .65, very nearly the lowest value of all the states of Table IV-6. Only two states have lower holding power coefficients, South Dakota (.59) and Iowa (.61). The holding power of states at the other extreme is indicated as 1.28 for Colorado, 1.11 for Washington, and 2.45 for California.

Nebraska and most contiguous states in the Lower Midwest region do not appear at all strong in these relative measures of migration strength. In fact, Nebraska is one of the three or four states at the largest disadvantage of those contained in Table IV-6. The state loss coefficient is relatively high and the draw coefficient is low, indicating a poor ability to maintain and attract a population. This produces the poor holding power factor. Assuming that it is desirable to maintain a growing and viable population, attempts should be made to increase the draw and reduce the loss coefficients by applying corrective policies to those factors which affect the movement of people into and out of an area.[15]

The last column of this table portrays the retention factor for Nebraska. This is a measure of in-migration from a state to Nebraska as compared with out-migration from Nebraska to a given state. This ratio measures the rate of population exchange between Nebraska and other major population trading areas. A ratio in excess of unity indicates that Nebraska experienced a net influx in exchange with a state, whereas a small ratio typifies exchange patterns with another state that are unfavorable to Nebraska. A retention factor of unity indicates near-even terms of "human capital" trade, and it also may be indicative of inefficiency in exchange. Under these circumstances the terms of trade with a given state are nearly equal and some of the population exchange may be iterated needlessly.[16] Policy efforts might be directed toward pushing the retention factor with each state above unity, a desirable objective from the standpoint of retardation of population out-migration. The retention factor is close to unity for Nebraska with respect to most states in the Lower Midwest area, including two states in contiguous areas, Texas and Illinois. The very low retention factors for California, Colorado, Washington, and Minnesota are most damaging to population growth in Nebraska, and therefore are deserving of attention. In addition, increased effort could profitably be devoted to attracting more population from states with a low holding power coefficient. Iowa, Missouri, Kansas, and South Dakota are likely candidates in this regard.[17] Population flow patterns which are typified by retention factors close to unity in conjunction with small holding power coefficients probably can be corrected more readily than can population flow patterns exhibiting low retention factors and larger holding power coefficients. In this latter case, efforts might be directed more profitably towards determining the causes of and stemming the outflow only.

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[15] This may or may not be a feasible undertaking, and it would require more detailed analyses than are attempted here. There are circumstances where depopulation may be desirable to raise per capita incomes, but it is nearly impossible to convince interests at a regional or state level that increased welfare is an objective which should be pursued in place of the pursuit of increases in the total volume of output and resources, including human resources.

[16] This, of course, is in terms of quantity, and does not measure changes in the composition of the labor force.

Intra-State Population Patterns

Although the state consistently has been a net exporter of manpower in that there are about three out-migrants for every two in-migrants, a considerable amount of population movement does not appear in the inter-state flows examined above. This matter requires further analysis. Intra-state movement also relates to the forces of agglomeration and input-output access which are critical to the process of regional growth as well as the emerging patterns and problems of urbanization. Inter-state migration patterns only partially record the geographic mobility of a population. Movement within an area is no less effective than out-state migration in changing market access characteristics. In 1960, for example, over four of every 10 Nebraskans over five years of age lived in a residence different from their 1955 residence. Available data also indicate that nearly one-half of the national population changes its residence every five years.

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[17] This latter conclusion is not unlike one reached in the Upper Midwest study, where it is suggested that population exchange with states in the Midwest ". . . can be more easily swayed in favor of the Upper Midwest than with other regions." Russell B. Adams, Population Mobility in the Upper Midwest, Urban Report Number 6, Upper Midwest Economic Study, May, 1964, p. 52.

Urban-rural mobility. Table IV-7 shows that the overall residential mobility rate is slightly less in Nebraska than it is for the nation, averaging 45.2 percent of the 1960 population over five years of age between 1955 and 1960 for Nebraska. Approximately four-fifths of these migrants, or 36.3 percent of the population changed residence within the state and the remainder comprise migrants outside the state. The lower overall mobility for Nebraska compared to the nation is a product of lower residential mobility within the state, not less than the national average migration outside the state. Migration within the same county was 26.6 percent of the population in Nebraska, less than the national rate by 3.2 percentage points. While migration outside the state was nearly equal for both the nation and Nebraska, a larger proportion of the Nebraska migrants came from contiguous states than is true for all states.[18]

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[18] See Table A-21 of the Appendix for county data.

TABLE IV-7

MIGRATION AND POPULATION BY PLACE, NEBRASKA AND THE UNITED STATES, 1955 to 1960

	Nebraska				United States			
	Total	Urban	Rural Non-Farm	Rural Farm	Total	Urban	Rural Non-Farm	Rural Farm
Migrants as a Percent of Population:[a]								
Total	45.2	53.5	47.3	22.4	47.3	48.9	49.0	28.0
Within State	36.3	41.5	39.3	20.3	38.4	39.5	39.7	25.2
Outside State	8.9	12.0	8.0	2.1	8.9	9.4	9.3	2.8
Percent Distribution of Population	100.0	54.0	24.1	21.9	100.0	70.0	22.4	7.6
Percent Distribution of Migrants[b]	100.0	73.2	21.7	5.1	100.0	74.8	23.4	2.4
Attraction Index[c]	--	1.4	.9	.2	--	1.1	1.0	.3

[a] Population over five years of age.

[b] These are Nebraska in-migrants, i.e., persons who resided outside the state in 1955.

[c] Ratio of the percentage distribution of migrants to the percentage distribution of the population.

Source: Tables A-21 and A-22 of the Appendix.

One of the most significant factors affecting mobility is the urban-rural distribution of the population. Table IV-7 depicts the mobility of the population of Nebraska and the nation by urban and rural categories for the 1955 to 1960 period. Total urban migrants comprised 53.5 percent of the urban population in Nebraska over five years of age as compared to 22.4 percent of the population in rural farm areas. The same general trend was true for the nation, although here the mobility of the urban population was slightly less (48.9 percent) than it was in the state and rural farm mobility was greater (28.0 percent) at the national level than in Nebraska. Intra-state mobility among the urban Nebraska population was twice the rural farm rate, 41.5 compared to 20.3 percent of the 1960 population. The mobility of Nebraskans to locations outside the state is also greater than the national average in urban areas and less in rural areas than for the nation.

The urban-rural mobility differential was largest for migration outside the state. Migrants from outside the state constituted 12.0 percent of the Nebraska urban population, 8.0 percent of the rural non-farm population, and only 2.1 percent of the rural farm component. This nearly six-fold differential between urban and rural origins in Nebraska contrasts with less than a four-fold differential at the national level. These data indicate a much reduced propensity of the rural farm population to move and particularly reduced rural farm migration outside the state. These mobility differences between the nation and the state are reinforced by rates of mobility for the rural non-farm population. Differential rates such as these, in combination with a larger absolute number of Nebraskans in rural areas, result in the lower overall mobility rate of the Nebraska population.

The distribution of in-migrants and the population by urban-rural residence is also indicated in Table IV-7. Out of every 20 Nebraska residents that moved from 1955 to 1960, only one was a rural farm resident, but rural farm residents comprised about one-fifth of the population. The last row of Table IV-7 contains the ratio of the percent distribution of in-migrants to the percent distribution of the population for the urban, rural non-farm, and rural farm areas.[19] An index value of unity indicates that area mobility is proportionate to the distribution of the population. Values less than 1.0 depict low mobility and values in excess of 1.0 portray disproportionately large mobility rates. The immobility of the rural farm population for the state and the nation, and the high mobility rates for persons in urban and rural non-farm areas is thus emphasized in Table IV-7. Pointed evidence is offered in support of the fact that in-migration to urban areas in Nebraska exceeds the rate in all national urban areas, but the attractiveness of the rural area in Nebraska is surpassed generally in comparison to the national average.

Important intra-state shifts in the population are suggested by the mobility patterns observed above. These population shifts reflect trends more specific than general movement away from rural farm areas and a gradual build-up of the urban place. Recent urbanization trends are reflected in population shifts throughout the nation from farms and small areas to trade centers and urban areas, from farm to non-farm industries and occupations, and from central-city areas to suburbs. Nebraska has not been immune to these forces, as subsequent analyses demonstrate. Specific patterns of population change have altered the socio-economic fabric of the state and areas within it. The consequences of diverse intra-state population growth require that considerable thought be given to local action and responsibilities. Rapid urban growth requires comprehensive planning, just as rural depopulation and decline does.

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[19] Data are for in-migrants only.

The urban-rural distribution of human resources. Urbanization in Nebraska has produced two types of stress. The population growth of selected urban areas and the trade centers surrounding these areas, including adjacent cities, has been rapid relative to population growth for the entire state. Conversely, there are decided tendencies towards decline and stagnation in most of the outlying rural part of the state. This requires that balanced efforts be directed at achieving the greatest utility possible from existing social capital in the small rural community which is consistent with the growth of the urban complex that is necessary to sustain overall state growth.[20]

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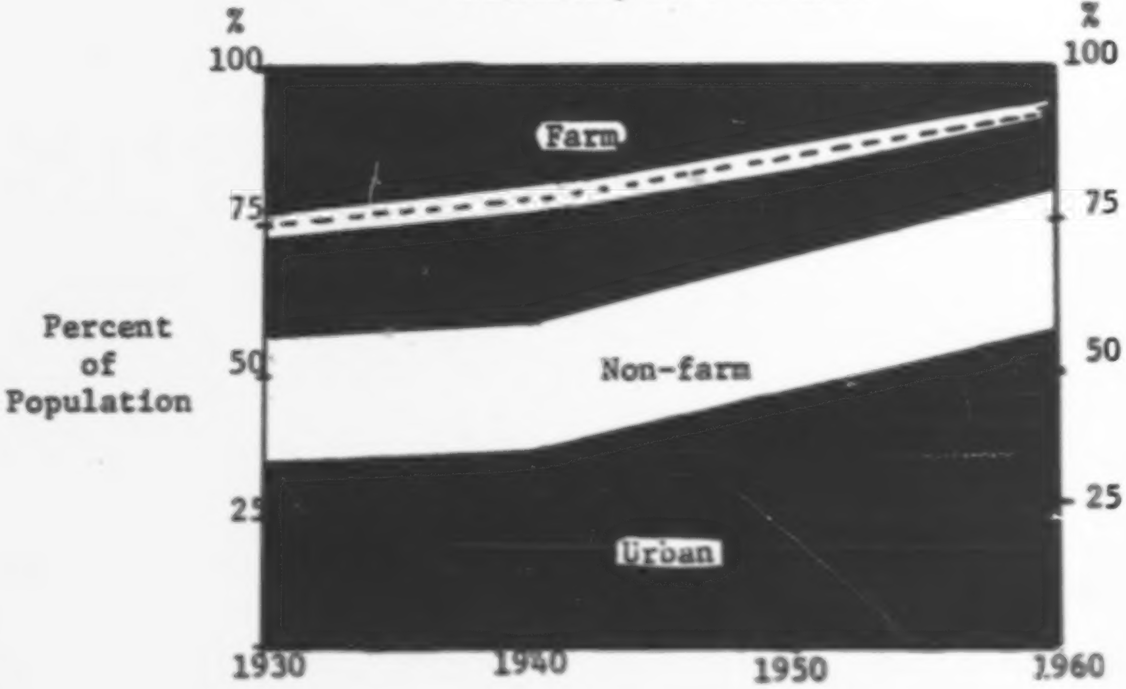
[20] The task of synthesizing these patterns of change neither insures the demise or perpetuation of the small town.

These are firmly established growth trends which require appropriate policy of an area economy desiring to remain in the mainstream of population growth patterns.

Figure IV-4 depicts recent trends toward urbanization in Nebraska and the declining importance of the rural farm area as a place of residence to the Nebraska population since 1930. Over this 30-year period, the Nebraska population increased very slightly (2.3 percent), but the shift in rural-urban residence of the population was marked. The farm population has declined from nearly one-half of the population in 1930 to slightly less than one-fourth the 1960 population. This is in sharp contrast to the proportion of the population living in farm places at the national level which is indicated by the dotted

FIGURE IV-4

POPULATION DISTRIBUTION BY URBAN-RURAL PLACE, NEBRASKA, 1930 to 1960



Source: Table A-23 of the Appendix.

line, although the changes have been somewhat similar with the passage of time.[21] The slowly declining importance of the rural farm as a place of residence in this state appears in part because of stagnant population growth in Nebraska over these three decades, a period when the nation's population increased 45.5 percent. While the total population did not change appreciably in Nebraska, the rural farm population has declined 38.6 percent, and the urban population has increased 57.6 percent since 1930.

The pattern of Nebraska labor force distribution is indicated by the data in Table IV-8. The rural farm labor force, which numbered 113,800 persons in 1960, comprised 20.4 percent of the total Nebraska labor force. This is a smaller proportion than the rural farm population 14-and-over (21.1 percent), and it is also proportionately less than the total farm population given in Figure IV-4. This is evidenced by a participation rate of 54.0 percent for the rural farm labor force compared to a 59.0 percent participation rate in urban places. The urban and rural non-farm differential rate of labor force participation is even greater, as only 50.6 percent of the rural non-farm population was in the labor force in 1960.

Oddly enough, the rural farm participation rate for males in 1960 exceeded the state average of 79.5 percent by 6.3 percentage

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[21] It was noted earlier that the decline in agricultural employment was less rapid in Nebraska than in the nation. This increasing relative importance of farm activities in Nebraska compared to their national importance is also apparent in these data.

TABLE IV-8

NEBRASKA POPULATION CHARACTERISTICS BY PLACE, 1960

	Population Characteristics by Place			
	Total State	Urban	Rural Non-farm	Rural Farm
Population 14+[a]	996.2	541.3	244.3	210.6
Labor Force	556.4	319.0	123.6	113.8
Participation Rate[b]	55.9	59.0	50.6	54.0
Enrolled in School:				
Number	73.9	38.0	15.8	20.1
Percent	7.4	7.0	6.5	9.5
Over 65 Years:				
Number	113.2	58.9	40.9	13.5
Percent	11.4	10.9	16.7	6.4

[a] In thousands of persons.

[b] Percent of the population over 14 years of age.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(1) 29(C), p. 29-154, and Table A-22 of the Appendix.

points. The female rate of participation was 18.2 percent in rural farm areas compared to 33.2 percent in urban places. This is the basic reason for lower overall participation rates in rural farm areas.[22] The participation rate differential between urban and rural non-farm areas (8.4 percentage points) attests to the large dependent population in rural non-farm areas. The participation rate of 72.1 percent for rural non-farm males is considerably below the 80.3 percent state average for males. In addition, the female rate of labor force participation in rural non-farm areas is 29.6 percent, or 10.3 percentage points less than the 39.9 percent for females in urban places. As a consequence of high female participation in urban areas, the overall urban participation rate is considerably higher than it is in rural areas.

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[22] See Table A-22 of the Appendix for participation rate data by sex for persons over 14 for 1960.

Lower labor force participation by the rural farm population is partially explained by the high proportion of the rural farm population enrolled in school. Table IV-8 shows that 9.5 percent of the rural farm population over 14 is so engaged compared to 7.0 percent for the urban places in the state. School enrollment tendencies and the reduced rate of female participation possibly reflect reduced job opportunities in rural farm areas.[23] It is clear from these data that significant changes have occurred in the Nebraska population in terms of locational origins even though the size of the total stock of human resources has changed only minutely.

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[23] There is some implication of underutilization of the female labor supply. For example, one might apply the urban participation rate (39.9 percent) to the rural and rural non-farm female population in the state (221,809), and obtain a "potential" rural female labor force of 88,500 persons. In contrast, the actual 1960 labor force was 54,348, or 34,152 persons less than the potential. This comprised 6.1 percent of the total Nebraska labor force in 1960 which, when added to the unemployment rate reveals that one of every 10 Nebraskans may be unemployed or underemployed. There are some serious problems and questionable assumptions with this procedure, not the least of which is the dispersion of these underutilized resources and the age-structure bias in this estimate. In addition, this component may play a major "labor force" role to the rural farm effort, particularly on a part-time basis.

Population growth by urban-rural place also relates to the age distribution of the population. The first portion of Table IV-9 depicts the distribution of the 1960 population of Nebraska by age and place, and the second part of this table reveals the percentage change in each age-location component from 1950 to 1960. Approximately three of every 10 persons in the state are in the 0 to 14 age group in all areas. The incidence of out-migration of youth in conjunction with the size of the 0 to 14 age group suggests how important it is to reduce population outflows from Nebraska.

The urban population increased by approximately 20 percent, the rural farm population declined by approximately 20 percent, and the rural non-farm population has increased by about eight percent since 1950. However, there are divergent age distribution patterns between urban and rural categories. There is a greater proportion of the 15 to 24 age group of the population in urban areas compared to rural locations. The urban population increased more than 50 percent above the 1950 level for persons under 15 years of age, but only by about 10 percent for persons in the 15 to 24 and 25 to 64 age categories. The 65 years-and-over age category also increased much more rapidly in urban areas than it did in rural places. Urban growth in Nebraska in the magnitude noted earlier (see Table IV-6) was possible only through the influx of human resources from rural areas who were previously related to agricultural endeavors. Unfortunately, this

TABLE IV-9

NEBRASKA POPULATION BY AGE, SEX, AND PLACE, 1960 PERCENT DISTRIBUTION, AND 1950 to 1960 PERCENT CHANGE[a]

	Male					Female				
	0-14	15-24	25-64	65+	Total	0-14	15-24	25-64	65+	Total
Percent Distribution: 1960										
Urban	32.3	13.5	44.6	9.6	100.0	29.2	14.3	44.7	11.8	100.0
Rural Non-farm	29.6	12.8	42.2	15.4	100.0	28.1	11.4	42.5	18.0	100.0
Rural Farm	32.9	12.4	46.7	8.0	100.0	34.9	11.3	47.2	6.6	100.0
Percent Change: 1950 to 1960										
Urban	53.7	10.8	10.8	30.3	23.7	55.7	9.4	10.2	43.0	24.0
Rural Non-farm	26.4	0.9	2.9	13.6	10.3	23.2	- 8.2	- 4.3	24.7	6.4
Rural Farm	-15.4	-37.7	-24.4	0.0	-22.1	-11.7	-35.8	-21.5	0.0	-19.2

[a] Totals may not add due to rounding.

Source: Table A-24 of the Appendix.

influx was small in those age groups having current productive potential, and disproportionately large in the dependent age categories.

The extent of dislocation from rural to urban areas is manifest in negative growth in the rural farm population between 1950 and 1960, particularly in the 15 to 24 age group which declined 37.7 percent for males and 35.8 percent for females. There also has been an actual reduction in the rural non-farm population between the ages of 15 and 64 years. This is the result of female population patterns, which exhibited a 8.2 percent decline in the 15 to 24 age group and a loss of 4.3 percent in the 25 to 64 category. In short, the population growth which has occurred in rural non-farm areas is the result of a natural increase in the 0 to 14 age group, considerable aging, and the inflow of people over retirement age.

Growth of Urban Centers in Nebraska

Characteristics of urban places. It is clear from census data that the rural communities in Nebraska experienced severe declines between 1950 and 1960. Urban places with populations between 1,000 and 2,500 persons declined 9.2 percent in this 10-year period.[24] Nearly one-fifth of all residents of communities of this size class were over 65 years old. The population of central city areas expanded by 22.9 percent, and suburban fringe areas experienced a population increase of 134.1 percent since 1950 in Nebraska. Urban places with a population in excess of 10,000 persons also grew nearly four times as rapidly (23.2 percent) as the state average of 6.5 percent. While recent trends toward urbanization are rapid, approximately four out of every 10 Nebraska residents live in rural areas and communities with populations of less than 2,500 persons. This represents a considerable dispersion of the population that may provide a substantial supply of human resources to growing urban areas in the future.[25]

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[24] See Table A-25 of the Appendix for further data on urban places.

Even though the urban population has grown nearly four times as rapidly as the overall state rate, population growth has been uneven among the 11 urban places in the state with populations in excess of 10,000 persons. Table IV-10 indicates that the large urban population changes of the past decade are attributable in a large part to the growth of the heavily populated areas of Lincoln and Omaha. With these exceptions, only the population of Fremont and Columbus grew in excess of 20 percent, increasing by 33.4 and 40.4 percent respectively. Of the remaining seven urban places, four experienced population increases ranging from 11.3 to 17.3 percent, and the populations of the remaining three urban places increased less than six percent over the decade. Table IV-10 depicts the proportion of the population over 65 years of age, which has a tendency to vary inversely to population growth. Table IV-10 also depicts

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[25] This depends upon the capability of the urban place in absorbing additional manpower in a productive way. This potential outflow will vary with the rate of decline in agricultural fortunes as well, and it is always subject to dissipation through net out-migration to other states.

TABLE IV-10

SOCIAL AND ECONOMIC CHARACTERISTICS OF SELECTED URBAN PLACES IN NEBRASKA

(thousands of persons)

City	Population			Non-Worker Ratio[a]	Median Education	Percent Unemployed	Percent Employed in Manufacturing		Median Family Income	
	Number	Percent Increase 1950 to 1960	Percent Over 65				1960	1950	Thousands of Dollars	Percent Under $3,000
Omaha	301.6	20.1	9.8	1.39	12.0	3.1	21.3	20.5	6.3	13.2
SMSA[b]	457.9	25.0	9.0	1.45	12.0	3.0	20.5	18.3	6.2	13.6
Lincoln	128.5	30.0	10.3	1.22	12.4	3.4	14.1	14.1	6.0	13.3
SMSA[b]	155.3	29.7	10.0	1.29	12.3	3.4	13.9	13.1	5.8	15.3
Beatrice	12.1	2.7	16.0	1.39	11.2	3.8	21.1	21.6	4.7	22.2
Columbus	12.5	40.4	10.8	1.40	12.1	2.8	27.5	12.6	5.6	15.0
Fremont	19.7	33.4	11.5	1.41	12.1	2.9	24.2	17.1	5.7	15.9
Grand Island	25.7	13.5	13.3	1.48	11.9	4.8	10.0	9.1	5.1	19.6
Hastings	21.4	5.9	13.9	1.36	12.1	5.1	12.4	12.7	5.1	19.4
Kearney	14.2	17.3	13.2	1.40	12.1	4.3	7.7	6.1	5.0	22.6
Norfolk	13.1	15.7	13.5	1.32	11.2	3.4	9.9	8.3	5.2	18.8
North Platte	17.2	11.3	10.6	1.61	12.1	4.9	8.5	5.5	5.6	17.4
Scottsbluff	13.4	4.0	10.7	1.34	11.6	3.2	14.1	11.3	5.6	17.6

[a] Ratio of persons not in the labor force to the labor force, including persons aged 0 to 14 years.

[b] All data are for urban places as defined in note (a) of Table A-8 of the Appendix except for Standard Metropolitan Statistical Area data.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, PC(1) 29(C), p. 29-139, and PC(1) 29(B), p. 29-27, and Census of Population 1950, Vol. II, Characteristics of the Population, part 27, p. 27-49.

the non-worker ratio, which ranges from 1.32 to 1.48 for all but a few urban places.[26] The non-worker ratio is unusually high for North Platte and it is unusually small for Lincoln, which may reflect the service, government, and education orientation of the city and greater than usual opportunities for female employment.

There is a considerable amount of variation in the unemployment rate among urban places, with the two most rapid growth areas of Columbus and Fremont experiencing the lowest rates of unemployment. Conversely, slower growth places, such as Hastings and Grand Island have experienced unemployment rates approaching five percent. Only five of the 11 urban places with populations in excess of 10,000 persons had more than 15 percent of their employed labor force engaged in manufacturing, while four urban places had 10 percent or less so engaged. In most cases the proportion of the labor force engaged in manufacturing has not changed markedly since 1950, with the exception of the rapid growth centers of Columbus and Fremont. There is some centrality to median family incomes in Nebraska urban places around the 5,600 to 5,800 dollar level. Beatrice is an exception, with an average family income of 4,700 dollars, about one-fifth off the state pace, and a large proportion (22.2 percent) of families with incomes below 3,000 dollars. This may be related to the unusually large percent of the population over 65 (16 percent) and the lowest educational attainment level of all of these urban places. Grand

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[26] This is the ratio of the non-working population to the labor force.

Island, Hastings, Kearney, and Norfolk had median family incomes ranging from 5,000 to 5,200 dollars. Each of these urban places had at least 18.8 percent of its families with incomes of less than 3,000 dollars, a meager 10.0 to 12.4 percent of its labor force was engaged in manufacturing, 13.0 percent or more of the population was over 65 years, and three of these four cities had decidedly higher than average unemployment rates.

Population changes by economic area. One theme common to the economic growth of regions is that certain cities and areas have become increasingly dominant as circulation or trade-area centers, and that the small town and rural areas tend to become increasingly dependent on these formative urban centers.[27] Data analyzed above indicated that growth was a reality in varying degrees for urban places. In addition, urban places in Nebraska are not evenly dispersed geographically. Fremont is close to the metropolitan economic area of Omaha in the northeast region, and Beatrice is located south of the metropolitan economic area of Lincoln. All but two of the remaining urban places depicted in Table IV-10 are located in the Central Nebraska economic area. Because urban places with populations under 10,000 persons increased somewhat lethargically when compared to larger urban areas and the nation as a whole, the success of Nebraska urban places in absorbing the population outflow from rural areas is debatable. Answering this question requires that urban growth patterns be considered relative to patterns of area out-migration. For this reason, and because the state differs considerably by economic area, there is some merit in considering population and migration patterns by economic area.[28]

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[27] See for example: J. R. Borchert, The Urbanization of the Upper Midwest: 1930-1960, Report No. 2 of the Upper Midwest Economic Study, 1963.

The only economic areas which did not experience net out-migration between 1955 and 1960 are the two metropolitan areas of Lincoln and Omaha (see Table IV-11).[29] The Lincoln area, which comprised 11.0 percent of the state's 1960 population, grew more rapidly than any other area from 1955 to 1960, as the population expanded by 29.7 percent. This was, in part, the result of net in-migration at the rate of 3.5 percent of the 1960 population over five years of age. Gross in-migration and gross out-migration totaled 51.2 percent of the population, by far the largest rate of population turnover of any economic area in the state. The Omaha area population increased 26.3 percent since 1950, nearly twice as rapidly as in the previous decade and four times the rate of growth for the state. The population in this area constitutes over one-fourth of the 1960 state total and net in-migration amounted to 2.0 percent of the 1960 population.

Each of the remaining seven economic areas experienced net out-migration, ranging from a low of 5.4 percent of the population for

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[28] See Figure I-1 which depicts the economic areas in Nebraska.

[29] Both areas did experience net losses in exchange with other states, however.

TABLE IV-11

POPULATION GROWTH FROM 1950 to 1960, AND MIGRATION BY ECONOMIC AREA, 1955 to 1960[a]

(thousands of persons)

Area[b]	Number of Migrants				Migration as a Percent of Population[c]			Percent of State 1960 Total	Percent Change 1950-60
			Net						
	In	Out	Number	Percent Out-State	In	Out	Net		
Sand Hills	7.4	14.6	- 7.2	.69	12.4	24.6	-12.2	4.7	- 8.6
South West	12.3	20.8	- 8.6	.99	14.5	24.7	-10.2	6.8	3.5
Central	24.4	48.5	-24.0	.83	10.1	19.9	- 9.9	19.4	1.2
Southern	7.9	16.3	- 8.5	.67	11.1	23.0	-11.9	5.6	-11.8
South Central	14.2	24.7	-10.5	.74	11.8	20.5	- 8.7	9.5	- 5.1
North East	14.0	19.7	- 5.6	.96	13.5	18.9	- 5.4	8.4	3.2
South East	10.9	19.1	- 8.2	.59	10.7	18.8	- 8.1	8.0	- 6.0
Lincoln	36.6	32.0	4.7	0[d]	27.3	23.9	3.5	11.0	29.7
Omaha	63.8	57.4	6.4	0[d]	19.9	17.9	2.0	26.6	26.3

[a] Totals may not add due to rounding.

[b] See Figure II-1 for geographic definition of these areas. The regions numbered 3a and 3b are treated as one area and each metropolitan economic area is comprised of the Lancaster and Douglas-Sarpy county populations only.

[c] Population over five years of age.

[d] There occurred a net out-migration of 4,200 persons to other states from Lincoln, but a net in-migration from state economic areas of 8,900 persons. Omaha exported a net of 300 persons to other states and attracted 6,700 persons from other economic areas in the state. Thus both Lincoln and Omaha offset population outflows by absorption of population from rural areas.

Source: U.S. Department of Commerce, Bureau of the Census, Mobility for State Economic Areas, PC(2) 2B, Tables 30, 31, and 32; and Donald J. Bogue and Calvin L. Beale, Economic Areas of the United States (New York: The Free Press of Glencoe, Inc., 1961), pp. LX & LXI.

the North East economic area which experienced a population increase of 3.2 percent since 1950, to a net out-migration high of approximately 12 percent for the Sand Hills and Southern Nebraska areas. These latter two areas, which constituted about one-tenth of the 1960 population of Nebraska, experienced population declines over the 1950 to 1960 decennial period of 8.6 and 11.8 percent respectively. Of the 7,200 net out-migrants from the Sand Hills area, 69 percent were migrants to out-of-state locations, and 67 percent of the net out-migrants from the Southern economic area located in other states. The rate of net out-migration from the South East area which borders Lincoln and Omaha was 8.1 percent, but only 59 percent of all out-migrants left the state, the lowest ratio for all areas.

Three economic areas, the South West, Central, and North East experienced nominal increases in population between 1950 and 1960. The South West provided 8,600 net out-migrants, a loss of 10.2 percent of the area's 1960 population, 99 percent of whom located outside the state. The Central area, which contained 18.7 percent of the 1960 population, provided 24,000 net out-migrants. Again, most of the out-migrants from this area (83 percent) left the state. The North East area contained 8.4 percent of the 1960 population in the state, and experienced a net out-migration rate of 5.4 percent, nearly all of which also represented migration to other states on a net basis.

Intra-state migration. The direction of human resource flows within Nebraska is portrayed in Table IV-12, along with population exchange rates from one economic area to other areas and to out-state destinations as well. If Table IV-12 is read by column, gross intra-state in-migration is given for each economic area, and reading by rows denotes gross intra-state out-migration. Total in-migration from other areas to each economic area is depicted in row (i) of the matrix and total out-migration to other economic areas is contained in column (i). Row (ii) and column (ii) of the matrix depict the in-migration from and out-migration to other states, respectively.

The Sand Hills area, for example, experienced gross in-migration from economic areas in the state in the amount of 3,765 persons, and 3,603 persons moved into the area from other states. Table IV-12 also indicates that 1,151 persons (about 30 percent of all gross in-migrants from other areas within the state) came from the South West and that another 1,462 persons were attracted from the Central economic area. Out-migration was 6,003 from the Sand Hills to other areas in Nebraska and another 8,590 persons left for other states. Out-migration to areas in Nebraska benefited the South West and Central regions primarily, as 1,353 and 2,255 persons moved to these areas respectively.

Population exchange rates depict the number of in-migrants to an economic area for every 100 out-migrants from that area when read by column, and the number of out-migrants for every 100 in-migrants when read by row. These rates are a crude indicator of the attractiveness of an area relative to all other population exchange patterns between economic areas in the state. Exchange rates are also presented for total intra-state and inter-state flows. In addition, the final column of Table IV-12 contains the disbursement ratio for each area.

TABLE IV-12

INTRA-STATE MIGRATION FLOWS BY ECONOMIC AREA, NEBRASKA, 1955 to 1960

To From	Sand Hills (SH)	South West (SW)	Central (C)	Southern (S)	South Central (SC)	North East (NE)	South East (SE)	Lincoln (L)	Omaha (O)	Total Out-Migration to		
										Different Economic Area (i)	Different State (ii)	Disbursement Ratio[a]
Sand Hills	--	1,353	2,255	257	306	401	146	604	681	6,003	8,590	1.43
Exchange Rate[b]	--	118	154	143	146	296	113	225	296	159	238	
South West	1,151	--	1,252	419	460	151	185	711	427	4,756	16,086	3.38
Exchange Rate[b]	85	--	93	85	91	141	159	169	136	102	212	
Central	1,462	1,346	--	1,641	2,773	2,640	567	3,453	4,697	18,579	29,872	1.61
Exchange Rate[b]	65	108	--	70	105	127	82	290	230	128	300	
Southern	180	494	2,352	--	1,685	176	444	1,049	418	6,798	9,518	1.40
Exchange Rate[b]	70	118	143	--	187	164	235	356	186	168	249	
South Central	210	506	2,658	902	--	500	1,125	4,110	1,260	11,271	13,396	1.19
Exchange Rate[b]	68	110	96	54	--	116	116	283	237	131	239	
North East	135	107	2,071	107	429	--	538	1,080	2,696	7,163	12,510	1.75
Exchange Rate[b]	34	71	78	61	86	--	57	306	149	103	177	
South East	129	116	690	189	964	936	--	3,766	2,242	9,032	10,061	1.11
Exchange Rate[b]	88	63	122	43	86	174	--	276	178	160	191	
Lincoln	268	420	1,191	295	1,453	353	1,364	--	2,699	8,043	23,934	2.98
Exchange Rate[b]	44	59	34	28	35	33	36	--	127	48	121	
Omaha	230	315	2,042	225	531	1,810	1,260	2,122	--	8,535	48,844	5.73
Exchange Rate[b]	34	74	43	54	42	67	56	79	--	56	100	
(i) Total In-migration Different Economic Area	3,765 63	4,657 98	14,511 78	4,035 59	8,601 76	6,967 97	5,629 62	16,895 210	15,120 177	80,180 --	172,911 155	2.16
(ii) Total In-migration Different State	3,603 42	7,600 47	9,929 33	3,825 40	5,503 42	7,079 57	5,277 52	19,746 83	48,696 100	80,180 --	111,358 64	
Receipt Ratio[c]	.96	1.63	.68	.95	.65	1.02	.94	1.17	3.22	1.39		

[a] The ratio of inter-state to intra-state out-migration. Large values depict a strong tendency towards out-state export of human resources, whereas values less than unity and approaching zero depict the attraction of out-state population

[b] The rate of exchange between areas. Reading by row reveals the rate of out-migration per 100 receipts, and by column, the rate of in-migration per 100 disbursements. Thus, area S.H. sends 1,353 persons to S.W., but the outflow from S.W. to S.H. is 1,151. The ratio 1,353 ÷ 1,151 = 1.18 indicates that 118 persons enter S.W. from S.H. for every 100 who leave S.W. for S.H. This latter term is also depicted as the reciprocal of 118, or 1,151 ÷ 1,353 = 85. Reading by columns reveals that area S.H. receives 85 persons from S.W. for every 100 persons it sends to S.W.

[c] The ratio of intra-state to inter-state in-migration. Values greater than unity depict an increasing relative degree of inability to attract out-state migrants and values approaching zero depict high out-state attraction ability.

Source: U.S. Department of Commerce, Bureau of the Census, Mobility for State Economic Areas, PC(2)-2B, pp. 197, 225, 295.

This is the ratio of out-migration to other states relative to out-migration to intra-state areas. The final row of Table IV-12 contains the receipt ratio, which is the ratio of in-migration from other states to in-migration from areas in the state. Values of unity for both the disbursement and receipt ratio indicate that the population flow with other states is equal to the flow to economic areas within the state. Values greater than unity depict a large out-state flow for an economic area. Therefore, a large receipt ratio is preferred and a small disbursement ratio is desirable from the point of view of human capital exchange. Economic areas with exposed borders not contiguous to other state areas may distort area comparisons, just as the extent of urbanization of an area can be expected to be an influence on these ratios.

The Sand Hills area, for example, is at an extreme disadvantage with other areas in that the population inflow (column value) to the region from other intra-state areas is only 63 persons for each 100 out-migrants to these areas. That is, the rate of human capital outflow from the Sand Hills to other areas (the row value) in the state is 1.59 times as great as the flow from these areas _to_ the Sand Hills. Table IV-12 reveals that the area also exports 238 persons to other states for every 100 received from other states. Population exchange rates are more disadvantageous for the Sand Hills area relative to the North East, Lincoln, and Omaha areas than other areas. The Sand Hills disbursement ratio of 1.43 is large, but it is less than the state average 2.16 disbursement ratio. The receipt ratio for the Sand

Hills was .96, indicating that gross out-migration is out-state oriented and gross in-migration is drawn nearly equally from economic areas in Nebraska and other states. These data and ratios do indicate at the same time that this economic area contributes to the net out-migration problems of the state.

Similar analyses can be conducted for each economic area with these data. While detailed intra-state analysis is tangential to analysis at the state level, some of the more important population flows within economic areas can be noted. The disbursement ratio varies greatly among these areas. As might be expected, the ratio is large for the metropolitan areas of Omaha (5.73) and Lincoln (2.98). It is also large (3.38) for the South West area, indicating that more than three times as many out-migrants from this area leave the state as stay in Nebraska. This is particularly important because of the absolute size of the population outflow from the South West, as 16,086 persons out-migrated to other states between 1955 and 1960. At the other extreme, the South East and South Central areas had low disbursement ratios. This no doubt relates to their proximity to the urban centers of Lincoln and Omaha which reflects agglomeration forces. The receipt ratio is larger for the Omaha (3.22) and the South West (1.63) areas than for the state average (1.39), indicating some ability on the part of these areas to attract migrants from other states. Conversely, the Central and South Central areas have low receipt ratios since they draw most of their in-migrants from economic areas in the state.

The exchange rates indicate that no economic area in Nebraska receives net in-migrants from outside the state. The Lincoln area, for example, experienced in-migration from other states of 19,746 persons and out-migration to other states of 23,934 persons. Thus, the exchange rate with other states was 121 out-migrants for every 100 in-migrants reading by row, or 83 in-migrants for every 100 out-migrants when read by column. The Omaha area exchange rate with different states was approximately unity on the average, but economic areas other than the two metropolitan areas exhibited inflow (column) values as low as 33 for the Central area, ranging up to a high of 57 in-migrants for every 100 out-migrants. The Omaha and Lincoln areas exhibited very favorable exchange rate values with other areas in the state, and the South West and North East areas exchanged on close to an equal basis with other areas in the state. Conversely, the intrastate terms of population exchange were unfavorable to the South, South East, and the Sand Hills area, as between 159 and 168 persons migrated to other areas in Nebraska for every 100 that these three areas attracted from other regions.

Summary

The postwar period has witnessed some convergence of the Nebraska and national population growth rate although the national rate remains significantly greater than the state rate. Nebraska's population is somewhat concentrated in the dependent age categories, compared to the nation, particularly in the 65-and-over age group. From 1950 to

1960, for example, the population of working age (14 to 64 years) actually declined from 1,008,600 to 996,300 persons in Nebraska while the total state population increased by 6.4 percent. This is due largely to a decline in the working-age group of the male population. The male labor force was smaller in 1960 than in either 1950 or 1940, but increased participation on the part of the female work force produced a small increase in the total Nebraska labor force.

Nebraska has experienced a cumulative population loss of approximately one-quarter of a million persons in the postwar era due to out-migration. While three-fifths of this amount represents net out-migrants, the remainder is representative of natural increases lost because of net out-migration. The net out-migration which has occurred is heavily concentrated in younger age groups. The Nebraska population between the ages of 14 and 44 decreased in excess of six percent while the nation's population in this category increased in excess of six percent from 1950 to 1960. The extent to which these growth patterns reflect net out-migration is pointedly displayed when one recognizes that five of every six of the 172,800 gross out-migrants from Nebraska between 1955 and 1960 were less than 45 years old. Much of this population loss apparently occurred between 1950 and 1958, and a lessening of the rate of net out-migration has appeared since then. This has been reflected in the narrowing of the population growth differential between the nation and the state in recent years. These mildly optimistic population patterns are based upon trends for a very short period of time which may not be applicable to the long-run growth circumstances of the Nebraska economy, however. Nonetheless, this recent population growth pattern complements a slight quickening in the rate of growth in income which also appeared in the latter portion of the 1950's. These are two changes which stand out clearly because they are contrary to the overall decline depicted in so many ways.

Efforts to discourage out-migration are least apt to be successful if exchange with Mountain and Pacific States is involved. Colorado and California are the two states most frequently selected as destination states by Nebraska out-migrants, while contiguous states in the immediate West North Central area furnished by far the majority of Nebraska in-migrants. Data for 1955 to 1960 indicated that the "holding power" of Nebraska is among the lowest of any of the population declining states in the central United States. Population exchange with states probably can be influenced in favor of Nebraska if states in the Midwest are involved, since the retention factor was highest in these instances.

The mobility of the Nebraska population is somewhat less than national mobility. This reflects the heavier rural orientation of the Nebraska populace and it is also a product of out-migration.[30] The large urban-rural farm mobility differentials are more important. The differential is larger in Nebraska than for the nation because of substantially less rural farm mobility and more urban mobility in the state. In addition, most of the rural Nebraska migrants did not involve population movement outside the state.

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[30] Table IV-7 and other available data which prompted this conclusion are based upon in-migration which is a smaller percentage of a state's population if there is a net outflow of population.

Several aspects of the supply of human resources are related to urbanization which has progressed rapidly in this state, but not nearly as rapidly as for the nation. These national trends that are also characteristic of Nebraska have taken place concurrent to a small increase in the total population in Nebraska. Consequently, the supply of human resources in Nebraska has been affected primarily by internally generated forces such as out-migration, urban-rural redistribution, and intra-state population flows.

Participation in the labor force is much greater in urban areas than it is in rural non-farm and rural farm locations. This is due in part to the fact that the female population in rural areas participates to a lesser extent than females in urban areas in the labor force. Still another factor explaining both differential labor force participation and differential urban-rural population growth is the age structure of the population by place. The rural non-farm population component is heavily concentrated in the 65-and-over age group and under represented in other age groups, particularly the 25 to 64 age category. Table IV-9 depicted the great variations in population growth by location and age structure, indicating, for example, that the 1950 to 1960 population increase for persons 15 to 24 years of age was about 10 percent in urban areas and -36 percent in rural farm locations in Nebraska.

It is clear that urban communities with populations less than 2,500 persons were declining rapidly between 1950 and 1960. Population growth in Nebraska was largely the result of expansion in the Lincoln and Omaha areas which experienced growth rates four times as great as the state average. There is a very sizable proportion of the population living in the nine other Nebraska communities which had populations in excess of 10,000 persons in 1960. Among other important urban places with large relative population increases were Fremont and Columbus. Conversely, Beatrice, Scottsbluff, and Hastings did not expand as rapidly as might be desired for trade-area centers designed to assimilate rural outflows of human resources. It is important that urban places of moderate size grow if the released rural farm population is to be retained and engaged in productive activities in this state.

The diversity of population patterns in Nebraska economic areas is great. The largest population gains between 1950 and 1960 occurred in the Lincoln (29.7 percent), the Omaha (26.3 percent), and the South West (3.5 percent) economic areas. Conversely, the population of the Southern economic area declined 11.8 percent. Net out-migration exceeded 8.0 percent of the 1960 population over five years of age for all but the North East, Lincoln, and Omaha economic areas. The majority of all net out-migrants from other than metropolitan economic areas were destined for other states, and four areas experienced this out-state pattern for seven of every eight net out-migrants.

Population flows between economic areas within the state are also very important. Analysis of these flows revealed the relative strengths and weaknesses of the several areas in Nebraska with other state economic areas and with other states. It was found that all economic areas export human capital in exchange with other states, including Lincoln and Omaha. In general, the intra-area terms of population exchange heavily favored Lincoln and Omaha. The North East and South East area exchange rates were favorable with other than the metropolitan areas. These remaining economic areas experienced a population outflow to other states two or three times as great as the inflow.

The general pattern of inter-and intra-state population change exposed in this chapter clearly must be reversed in the future. At the very least, their reality must be recognized and not ignored. Population patterns do not occur in a void; rather, they are a reaction to and a cause of more fundamental economic developments and circumstances. It is to these changes as they are reflected in Nebraska industrial and occupational structures that we now turn our attention.

CHAPTER V

THE CHANGING STRUCTURE OF THE POSTWAR NEBRASKA ECONOMY

The stock of human capital in an area economy is affected by the structure and growth potential inherent in the area's industry mix. Therefore, it is desirable to examine factors which depict and relate to state industrial specialization patterns, and the changing structure of the industry mix in the area economy. Attention is devoted here to the postwar Nebraska economy in order that current patterns of change might be emphasized.

The aggregative analysis of Chapter II which covered growth patterns over several decades revealed that some Nebraska sources of employment by industry sector were much less viable than others.[1] The analysis of the changing structure of the Nebraska economy conducted earlier is deficient in three ways. First, the analyses were extended in the time dimension to the point that meaningful recent changes were not given appropriate weight. This extended time period contributed to a second deficiency--that of excessive aggregation. It is of limited value to speak of changing growth patterns in an economy currently providing more than one-half million jobs when analyses are limited to a few sectors examined at 10-year intervals. The third deficiency is that analyses have not treated the occupational or manpower mix generated by employment growth in the industrial structure existing in Nebraska. Changes in the occupational mix are vital characteristics of an area economy which are important to manpower utilization and economic growth. This chapter is designed to overcome some of these deficiencies. It is devoted to a thorough examination of change in the postwar Nebraska economy with an overt attempt being made to preserve as much industry detail as is meaningful.

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[1] For example, the service, trade, and finance sectors were at the greatest area disadvantage in terms of growth in employment at a rate sufficient to permit the state to maintain its employment share relative to the nation. While agricultural sources of employment declined dramatically in the state, this was the only industrial source of employment which exhibited an area advantage over this long-run period.

First, it is necessary to examine recent employment shifts by broad industry sector in the postwar era as an introduction to the changing structure of employment. Special attention is focused upon the agricultural and manufacturing sectors because of the strategic role played by these industries in the state economy. Value added and other indicators of economic growth are used in addition to employment indices in order to reveal the changing structure of the Nebraska economy. The last major analytical portion of this analysis evaluates occupational specialization patterns and shifts in the occupational mix of the Nebraska stock of human capital.

Aggregate Shifts in Employment, 1950 to 1963

The earlier application of shift-differential analysis of employment by broad industry category revealed a very sizable growth gap between Nebraska and the United States over the course of several decades. Throughout the 1900 to 1960 period the state of Nebraska was not able to maintain its employment share relative to the nation. Similar trends are apparent from the data in Table V-1, which examines employment shifts in Nebraska in the postwar period.[2]

Total employment in Nebraska increased 4.6 percent over the 1950 to 1963 period, compared to a 15.2 percent increase for the nation. As a consequence, there is a growth gap of 62,200 persons at the end of this 13-year period. Again, because of an aggregate growth differential between the two economies there is a growth gap of 17,300 persons for the 1958 to 1963 period. Most of the growth gap from 1950 to 1963 is the result of unfavorable mix effects which typifies an unusual reliance on slow growth sectors, while a small area disadvantage (2,400 persons) is symptomatic of poor industry access in the state.

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[2] The employment data of Table V-1 are from the United States Department of Labor. These data are obtained on an "establishment" basis. It is generally agreed that data so obtained are more accurate by industry category, but they have the "double counting" disadvantage since a person holding down two jobs may be counted twice. Industry employment data obtained by censuses generally provide a more accurate picture of total employment, but these data are subject to error when disaggregated by industry sector because the respondent to the census may be less capable of determining the industry category to which his firm belongs than the employing establishment. Furthermore, the data of Table V-1 do not provide a completely meaningful figure for total employment. Total non-agricultural employment is accurate (within the limitations described above), but the agricultural employment figure, which is also based upon the establishment approach, is obtained from the Agricultural Reporting Service. Because of the inclusion of unpaid family workers and all persons working more than one hour per month for pay, this figure is approximately 50,000 persons higher for Nebraska in 1960 than a comparable census count. These data had to be used in the form presented below simply because they are the only available data for the time period covered (i.e., for non-census years).

TABLE V-1

EMPLOYMENT SHIFTS IN NEBRASKA, 1950 to 1963 and 1958 to 1963[a] (thousands of persons)

Industry Group	Employment			1950 to 1963			1958 to 1963		
	1950	1958	1963	Growth Gap[b]	Area Advantage	Mix Effect	Growth Gap[b]	Area Advantage	Mix Effect
TOTAL	590.6	591.0	618.0	-62.2	- 2.4	-59.7	-17.3	5.6	-22.9
Agriculture[b]	197.4	155.3	143.7	-83.7	13.4	-97.1	-23.4	12.2	-35.6
Mining	1.1	2.5	2.1	0.8	1.3	- 0.5	- 0.5	0.1	- 0.6
Construction	19.0	19.8	24.7	2.8	0.4	2.4	3.4	3.4	---
Manufacturing	52.1	60.0	66.5	6.5	8.3	- 1.8	2.0	2.5	- 0.5
Trade	85.2	87.8	98.3	0.2	- 8.8	9.0	3.9	1.9	2.0
Fin., Ins. & Real Est.	17.4	21.8	24.4	4.4	- 1.6	6.0	1.1	- 0.5	1.6
Transportation	41.1[c]	26.9	25.5	-10.6[c]	- 3.1[c]	- 7.5[c]	- 4.7	- 1.4	- 3.3
Comm. & Pub. Util.		11.0	11.3				- 5.8	5.1	-10.9
Services	42.3	52.2	61.2	12.5	- 3.4	15.9	5.1	- 1.8	6.9
Government	61.1	74.8	84.7	14.3	- 8.5	22.9	4.3	- 3.0	7.3
Other Non-Agriculture[b]	73.9	78.9	75.6	- 9.5	- 0.4	- 9.1	- 9.2	- 8.7	- 0.5

[a] Data in the first three columns are from the source below and other data were calculated by the author. Data may not add due to rounding.

[b] Agricultural employment includes hired workers, operators, and unpaid family workers. Other non-agriculture includes proprietors, self-employed, unpaid family workers (non-agriculture), and domestics. See note (b) to Table A-33 of the Appendix for further comments.

[c] Data analysis from 1950 to 1963 is based upon the combined transportation, communications, and public utilities industry group.

Source: Nebraska Department of Labor, Division of Employment, and Table A-33 of the Appendix.

The period from 1958 to 1963 also exhibited an unfavorable mix effect, but this time a favorable area advantage of 5,600 persons occurred.

The growth gap from 1950 to 1963 is largely a product of unfavorable employment shifts in the agricultural sector, where the mix effect was -97,100 persons. The area advantage in agriculture was 13,400 persons, leaving a net growth gap of 83,700 for this sector--an agricultural growth gap larger than the total. The transportation, communication, and public utilities sector was the only other industry that exhibited an unfavorable growth gap (10,600 persons) in the Nebraska economy between 1950 and 1963. This latter was comprised in part of a mix effect shift of -7,500 and a competitive shift of -3,100 persons.[3]

Employment shifts in government, services, and manufacturing were favorable, providing fairly substantial positive offsets to the sectors above. Growth in the government sector in Nebraska, however, was much smaller than it was for the nation. This is indicated by the 8,500 area disadvantage revealed in Table V-1, which is offset by the large mix effect (22,900 persons) as employment in the state's government sector increased 38.6 percent while the average all-industry rate of increase was 4.6 percent in the state. Similarly, employment in services grew much more rapidly in the nation than in Nebraska, but again this competitive disadvantage was more than offset by positive mix effects which produced a net upward employment shift of 12,500 persons. The converse was true for Nebraska manufacturing, which experienced an area advantage of 8,300 persons as the state rate of growth was 27.6 percent compared to 11.6 percent for the nation. A small negative mix effect appeared in this sector as manufacturing grew less rapidly as a source of employment than the overall national economy. Construction also contributed to lowering the growth gap as the growth gap in this sector was a positive 2,800 persons between 1950 and 1963. Unfavorable market access is indicated by the 8,800 area disadvantage in the trade sector in Nebraska between 1950 and 1963. This is also true to a lesser extent for the finance, insurance, and real estate sector in Nebraska. In both of these cases, positive mix effects resulted in net upward shifts on an overall basis.

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[3] The 9,500 person growth gap in other non-agricultural industries probably is the result of unfavorable growth shifts in the trade sector. It will be recalled from Chapter III that the income mix effects in the trade sector also were negative for the periods 1948 to 1963 and 1958 to 1963. In this employment analysis there is no growth gap in the trade sector which is comprised in a large part of proprietors, self-employed, and unpaid family workers, perhaps because these effects show up in the non-agricultural group.

The period from 1958 to 1963 witnessed some of these same growth trends, with occasional differences appearing. The growth gap in employment of 17,300 persons again is a consequence of shifts in the agricultural (-23,400 persons) and transportation, communication, and public utility industries (-10,500 persons). It can be seen from the data in Table V-1 that Nebraska had an area advantage in the communication and public utilities sector from 1958 to 1963 and, similarly, there is a large area advantage for agricultural sources of employment in Nebraska during this period. In both cases, however, substantial negative mix effects offset these competitive gains because these industry sectors are declining sectors on a national basis. These two effects resulted in net growth gaps in both industry categories.

The construction sector exhibited an interesting trend in this period, as the entire upward shift of 3,400 persons was comprised of an area advantage. Manufacturing industries grew more rapidly in Nebraska from 1958 to 1963 than in the nation, as is evidenced by the 2,500 area advantage. Government sources of employment in Nebraska exhibited a positive growth gap in spite of an area disadvantage of 3,000 persons. Trade industries also exhibited a positive growth gap almost equally comprised of positive mix and area advantage effects.[4] Strong growth trends at the national industry level are revealed in the positive 6,900 mix effect of the service sector. A smaller area disadvantage reduced the growth gap to a net of 5,100 persons in services.

The Agricultural Sector

General characteristics of Nebraska agriculture. The single most important source of employment in the Nebraska economy in numerical terms is agriculture, in spite of the fact that large reductions in labor demand have occurred in this sector due to the rapid changes in farm technology in the postwar era. Therefore, it is desirable to direct special attention to certain aggregative changes in the agricultural sector during the postwar period.

Farm employment in Nebraska, estimated by the Agricultural Statistical Reporting Service, declined from 197,000 persons in

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[4] Again, the trade sector is no doubt incomplete as much of the other non-agricultural category is of a trade-industry nature.

1950 to 144,000 persons in 1963, a decrease of 26.9 percent (see Table V-2). Over the same period of time, farm employment in the United States declined 34.3 percent, as nearly 3.5 million persons left the industry. The intensity of the decline in farm employment

TABLE V-2

FARM EMPLOYMENT IN NEBRASKA AND THE UNITED STATES, 1950 to 1963[a]

Year	Nebraska		United States	
	Number	Percent Change	Number	Percent Change
1950	197		9,926	
		-13.2		-15.6
1955	171		8,381	
		- 6.4		-15.8
1960	160		7,057	
		-10.0		- 7.6
1963	144		6,518	
Change: 1950 to 1963	- 53	-26.9	-3,408	-34.3

[a] In thousands of persons. Includes operators, unpaid family workers, and all persons who work one or more hours for pay.

Source: U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1965, p. 243, and the U.S. Department of Agriculture, Statistical Reporting Service.

in Nebraska has been more severe between 1960 and 1963 than during other periods in the postwar era, as farm employment declined 10.0 percent. Conversely, farm employment declined more rapidly between 1950 and 1960 for the United States and the national rate of decline has lessened since 1960. This pattern of declining employment opportunities in agriculture continues to present a challenge to the state economy to use released human capital.

Table V-3 depicts some of the more important characteristics of the agricultural sector in Nebraska and the United States in 1950 and 1959. Farm consolidation has proceeded at a more rapid rate in the nation than in Nebraska. The number of farms declined 31.1 percent in the United States to a total of 3,711,000 in 1959. During this same time period the number of farms in Nebraska declined 15.6 percent. Somewhat similar patterns of decline occurred for farm operators, down 27.3 percent for the nation but 16.9 percent in Nebraska to a new 1959 low of 89,200 persons in the state. Average farm size in the nation increased 40.3 percent between 1950 and 1959 to 303 acres. The average farm in Nebraska increased less rapidly (19.2 percent) in size over the same period of time to 528 acres in 1959, considerably larger than the average farm size in the United States.

The average value of the Nebraska farm land and buildings in 1959 was 47,750 current dollars, up 84.1 percent from 1950.[5] Over this same period of time the average value of the typical farm in the United States was 34,826 current dollars, considerably less than the

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[5] Unless otherwise noted, reference to dollar value in this chapter is unadjusted for price changes.

TABLE V-3

AGRICULTURAL CHARACTERISTICS, NEBRASKA AND THE UNITED STATES, 1950 and 1959 (current dollars)

	1950		1959		Percent Change	
	Nebraska	United States	Nebraska	United States	Nebraska	United States
Number of Farms (thousands)	107	5,389	91	3,711	-15.6	-31.1
Average Farm Size (acres)	443	216	528	303	19.2	40.3
Average Farm Value (dollars)	25,939	13,983	47,750	34,826	84.1	149.1
Value of Land and Buildings (millions)[a]	2,781	75,261	4,234	129,005	52.2	71.4
Acres Irrigated (thousands)[b]	876	25,905	2,078	33,163	137.2	28.0
Average Value of Land and Buildings per Acre (dollars)	57.6	64.9	88.3	115.1	53.3	77.3
Farm Operators (thousands)	107.1	5,050.0	89.2	3,671.0	-16.9	-27.3
Percent of Farm Operators Under 45	47.9	42.5	40.5	34.6	---	---

[a] The value of land and buildings is based upon the average value per acre for farms in the sample for which the values of land and buildings were reported.

[b] The 1949 data are for total land in irrigated farms and 1959 represents irrigated cropland harvested plus irrigated pasture.

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture: 1959*, Vols. I & II, pp. 3 and 113; and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1965*, pp. 614-42.

typical Nebraska farm in spite of a national increase in value of 149.1 percent since 1950. This relative disparity in the percentage growth of the average value per farm between the nation and Nebraska is the result of a more rapid decline in the number of farms in the nation than in Nebraska, a national rate of growth in the number of acres of farm land per farm in excess of the state increase, and a more rapid increase in the value of farm land and buildings in the United States compared to Nebraska. The value of farm land and buildings in Nebraska increased 52.2 percent to 4.2 billion dollars in 1959 whereas the total value of farm land and buildings in the nation increased 71.4 percent to 129 billion dollars over this 1950 to 1959 period. In 1950 the average value of land and buildings in the nation exceeded the Nebraska value by about seven dollars per acre, but this differential increased to almost 37 dollars per acre in 1959. In this latter year the average value of land and buildings in Nebraska was about 88 dollars per acre, an increase of 53.3 percent since 1950.

One of the factors contributing to an increase in the average and total value of the Nebraska farm in the postwar period has been irrigation. Between 1950 and 1959 the total number of acres reported as irrigated increased from 876,000 to 2,078,000 in Nebraska, a rise of 137.2 percent. Over this same period of time there has been a comparatively small increase in irrigated acres for the total United States. Operators of farms in both the United States and in Nebraska have aged over this 10-year period. In 1950, 47.9 percent of all Nebraska farm operators were under 45 years of age, but by 1959 only

40.5 percent of the Nebraska farm operators were under 45. Comparatively speaking, farm operators throughout the United States tend to be older than they are in Nebraska. Only 34.6 percent of national farm operators were 45 years of age or less in 1959.

Some of these data support the area advantage that Nebraska agriculture exhibited in employment in the postwar era and other data tend to mirror the income problems which have also been noted in Nebraska. Several of the agricultural characteristics depicted in Table V-3, as once favoring the state, suggest that this margin has become narrower between 1950 and 1959 (e.g., average value of farm land and buildings).

Farm receipts, incomes, and expenses. Data analyzed earlier indicated that income earned from farming has declined dramatically in Nebraska and the nation. The slight area disadvantage exhibited in the Nebraska income shift analysis (see Chapter III), is some evidence which suggests that the agricultural income situation in Nebraska may be relatively inferior, or at best is equal, to the United States.[6]

Table V-4 depicts realized and net farm income by major component for Nebraska and the United States as an average for the three years 1949-51 and 1961-63. These data indicate that in spite of an increase of 25.5 percent in gross farm income over this period of time, total net farm income in Nebraska has declined 12.0 percent.[7]

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[6] It was noted in Chapter III, and it should be noted again, that the variability of agricultural income over short periods of time mitigate against reliable comparisons between Nebraska and the United States. Because of this, the data contained in Table V-4 were developed on a three-year-average basis.

TABLE V-4

REALIZED AND TOTAL NET FARM INCOME COMPONENTS,
NEBRASKA AND THE UNITED STATES,
1949-51 and 1961-63
(millions of current dollars)

	1949-51 Average		1961-63 Average		Percent Change	
	United States	Nebraska	United States	Nebraska	United States	Nebraska
Gross Income[a]	33,875.3	1,128.7	40,758.0	1,417.0	20.3	25.5
Cash Receipts	29,766.0	1,050.0	35,975.0	1,258.8	20.9	19.8
Production Expenses	19,831.0	709.0	28,190.7	1,040.7	42.2	46.8
Realized Net Income	14,044.3	419.0	12,567.1	376.0	-10.6	-10.3
Total Net Income[b]	14,420.0	455.8	13,045.3	401.0	- 9.5	-12.0

[a] In addition to cash receipts from farm marketings, gross income includes government payments and an estimated in kind income component. Totals may not add due to rounding.

[b] Differs from realized net income in that total net income includes changes in inventory.

Source: Tables A-31 and A-32 of the Appendix.

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[7] Data on farm income are on a current dollar basis unless otherwise indicated.

However, realized net income from farming in Nebraska declined 10.3 percent from 1949-51 to 1961-63, approximately the rate of decline that the nation experienced. The increase in gross farm income in Nebraska from 1.1 to 1.4 billion dollars over this period of time was greater than the national increase, but the increase in production expenses in Nebraska was also more rapid than the increase in production expenses for the nation. Production expenses increased from 19.8 to 28.2 billion dollars for the nation, a rise of 42.2 percent compared to an increase of 46.8 percent for Nebraska. As a consequence of this and the fact that Nebraska did not accumulate farm inventories at the national rate, the agricultural sector of the Nebraska economy did not exhibit favorable total net income growth compared to agriculture in the nation. The fact that total net income declined more rapidly in Nebraska (-12.0 percent) than in the United States (-9.5 percent) lends some credibility to a similar conclusion drawn earlier which was based upon the observation of a small area disadvantage in participation income.[8]

Per farm income growth. The combined effects of a less rapid rate of decline in total net farm income in the United States than in

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[8] The evidence in support of this conclusion was inconclusive in the earlier analysis (Chapter III) where it was revealed that Nebraska experienced an area disadvantage in terms of agricultural sources of net income. While Table V-4 does not completely validate these findings, it is further evidence that the selection of time periods and the conclusions reached are not out of context with the general pattern of growth and decline which best characterizes recent performance in the Nebraska economy.

Nebraska, and the more rapid rate of decline in the number of farms in the nation compared to Nebraska have produced some profound changes in income on a per-farm basis. Table V-5 depicts realized gross income per farm from 1949 to 1963 and realized net income per farm over this same period of time. Realized gross income per farm in Nebraska in 1963 was 17,034 current dollars, over one-half again as large as realized gross income per farm for the entire United States. Realized gross income per farm increased 54.5 percent from the 1949-51 average value to the 1961-63 average value in Nebraska. This compares to a larger increase of 82.4 percent on a per-farm basis for the nation over this same period of time, a differential of 27.9 percentage points between the state and nation. This trend occurred in spite of the fact that the absolute gross income increase from agriculture was as rapid in the nation as the state.

Realized net income per farm in Nebraska has consistently been much larger than in the United States. However, realized net income per farm in Nebraska increased only 10.4 percent between 1949-51 and 1961-63, while the national increase was 35.7 percent. Realized net income per farm for the United States was 3,408 dollars on the average in 1961-63, approximately 80 percent of realized net income per farm in Nebraska (4,275 dollars). In the 1949-51 period, realized net income per farm for the nation averaged approximately 65 percent of the Nebraska value. Since total realized net income declined by about equal percentages in Nebraska and the United States (see Table V-4), the gains that the United States has exhibited

TABLE V-5

REALIZED GROSS AND NET FARM INCOME, NEBRASKA AND THE UNITED STATES, 1949 to 1963 (current dollars)

Year	Realized Gross Income per Farm[a]		Realized Net Income per Farm[b]	
	Nebraska	United States	Nebraska	United States
1949	9,427	5,561	3,964	2,410
1950	9,447	5,751	3,462	2,334
1951	11,908	6,876	4,196	2,793
1952	11,990	7,122	4,007	2,774
1953	11,573	7,076	4,785	2,789
1954	11,043	7,058	3,400	2,543
1955	10,686	7,162	3,573	2,465
1956	9,976	7,671	2,997	2,666
1957	10,299	7,866	2,255	2,520
1958	13,570	8,955	4,069	2,985
1959	13,987	9,147	3,572	2,753
1960	13,920	9,606	3,810	2,961
1961	15,437	10,387	4,385	3,299
1962	15,870	11,104	4,005	3,420
1963	17,034	11,682	4,434	3,509
1949-51 Average	10,430	6,063	3,874	2,512
1961-63 Average	16,110	11,058	4,275	3,408
Percent Change in Average	54.5	82.4	10.4	35.7

[a] Realized gross income excludes changes in inventories.

[b] Realized net income excludes changes in inventories and represents net income of farm operators.

Souce: U.S. Department of Agriculture, Economic Research Service, Farm Income State Estimates: 1949-1963, Supplement to the Farm Income Situation, July, 1964, Tables 1 and 2, pp. 6-9.

on an income per-farm basis can be attributed to rapid reductions in marginal farming and perhaps farms re-established on reclaimed lands in the United States. Evidently those farms that have disappeared at the national level have been very inferior to the average national farm as well as being inferior to the typical Nebraska farm when measured by net income generated per farm. This probably is a desirable pattern of change from the national point of view, and from the Nebraska vantage point as well. At the same time, it may herald the coming of a period of time when agriculture in Nebraska exhibits less of an advantage as measured by realized net income per farm than has existed historically.

Table V-4 indicates that total cash receipts in Nebraska increased from an average of 1,050 million dollars for 1949-51 to an average of 1,258.8 million dollars by 1961-63, a rise in current dollars of 19.8 percent compared to an increase of 25.5 percent in gross income. During this same period of time, cash receipts increased 20.9 percent for the nation and gross income increased 20.3 percent. The relatively larger increase in total gross income for Nebraska compared to the nation can be attributed only to government payments in Nebraska exceeding the national average. Actually, the Nebraska increase in cash receipts from the sale of crops and livestock was inferior to the national rate of growth as Table IV-4 revealed. It appears that it might be instructive to examine sources of gross receipts more closely.

Sources of gross farm receipts in 1963. Table V-6 depicts the percent distribution of farm marketings and gross receipts in Nebraska for 1963.[9] Also included in this table are data on the Nebraska proportion of United States cash farm marketings and a specialization index. This index for a particular commodity is the ratio of Nebraska marketings by commodity as a percent of total Nebraska marketings to United States marketings by commodity as a percent of total national marketings. Thus, a value greater than unity is indicative of specialization in a particular kind of commodity in Nebraska compared to the national average. A value less than unity indicates the reverse, i.e., the given commodity is less important as a source of gross income to agriculture in Nebraska than it is to agriculture in the United States.

Total gross receipts in Nebraska from farming totaled about 1.4 billion dollars in 1963, or 3.37 percent of total gross receipts in the United States. Nebraska received 6.34 percent of all government payments during 1963, a total of 106.9 million dollars which accounted for 7.6 percent of total gross receipts from farming in Nebraska. During 1963, 64.8 percent of all farm marketings were comprised of livestock product sales, the majority of which are marketing receipts from the sale of cattle. In 1963, 7.28 percent of all farm marketings from the sale of cattle in the nation were

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[9] Additional data on income and expenses are contained in Tables A-31 and A-32 of the Appendix.

TABLE V-6

SOURCES OF CASH RECEIPTS IN NEBRASKA RELATIVE TO THE UNITED STATES, 1963 (current dollars)

Receipt Source	Gross Receipts in Nebraska			
	Millions of Dollars	Percent Distribution of Nebr. Marketings	Percent of U.S. Farm Marketings	Specialization Index[b]
TOTAL GROSS RECEIPTS	1,407.1	---	3.37[c]	---
Gov't payments	106.9	---	6.34[c]	---
Farm marketings	1,300.1	100.0	3.32[c]	---
Livestock products[a]	842.9	64.8	4.21	1.13
Cattle	587.7	45.2	7.28	2.06
Hogs	155.5	12.0	5.11	1.46
Sheep	12.8	1.0	4.01	1.25
Dairy products	48.7	3.7	1.00	.35
Poultry & eggs	34.3	2.6	1.00	.35
Crops[a]	457.3	35.2	2.68	.76
Wheat	112.5	8.7	5.43	1.55
Corn	187.8	14.4	9.48	2.72
Sorghum	75.7	5.8	16.82	4.83

[a] Components will not add to total because of omission of minor items.

[b] The ratio of the percent distribution of Nebraska farm marketings by commodity source to the percent distribution of United States farm marketings by commodity source.

[c] The percent that Nebraska receipts are of the nation's receipts in this category for 1963.

Source: U.S. Department of Agriculture, Economic Research Services, *Farm Income State Estimates*: *1949-1963*, Supplement to the *Farm Income Situation*, July, 1964, Table 10.

Nebraska sales. The specialization index for cattle is 2.56 for 1963, indicating that Nebraska is more than twice as specialized in the cattle component as is typical of farming in the United States.

The sale of hogs accounted for 12.0 percent of total farm marketings in 1963 in Nebraska, and 5.11 percent of total hog marketings in the United States for the same year. Dairy products and poultry and egg sources of receipts are under-represented in this state. Dairy products comprised 3.7 percent of the total farm marketings in Nebraska in 1963, approximately one-third the contribution that this sector made at the national level. Poultry and egg sources of income contributed 2.6 percent of all Nebraska marketings, or 1.02 percent of total receipts at the national level. This also is about one-third the relative contribution made to total national receipts as is indicated by the specialization ratio of .35 for the dairy and poultry-egg sector.

The marketing of crops produced 457.3 million dollars in 1963 in Nebraska, 35.2 percent of total farm marketings. This is a smaller relative contribution than the overall national average level as is indicated by the specialization ratio of .76 in 1963 for crops. The sale of wheat, corn, and sorghum is much more important to the Nebraska economy than is generally true at the national level, however. The sale of wheat comprised 8.7 percent of total Nebraska farm marketings in 1963 and 5.43 percent of total United States wheat marketings in this same year. Corn supplied 14.4 percent of all Nebraska marketings in 1963 and 9.48 percent of total United States corn marketings. Sorghum was less important to the Nebraska economy as a source of gross income, furnishing 5.8 percent of total marketings in 1963. This is a crop in which Nebraska is comparatively highly specialized as is indicated by the specialization index of 4.83. During 1963 Nebraska sale of sorghum constituted 16.82 percent of total United States marketings of this product.

Because of the predominance of the cattle industry in Nebraska, large amounts of hay are grown and consumed within the state. In 1962, for example, only 10 percent of all hay production was marketed. As a consequence, cash receipts from the sale of hay are insignificant, in spite of the fact that a great deal of the land resources of the state are devoted to this effort. Similarly, about one-half of the total production of corn is generally marketed, and approximately two-thirds of the total production of sorghum is marketed, the remainder being consumed. Therefore, these three crops are relatively more important in the state than is indicated by the data of Table V-6 which reveal sales only.

This broad overview of the comparative farm situation in Nebraska in the postwar period produces both commonplace and surprising conclusions. Agriculture typically earned more on a per-farm basis in Nebraska than is true nationally. However, the large per-farm advantage which Nebraska has enjoyed in the past is deteriorating. Data clearly support the fact that Nebraska's agricultural sector did not exhibit an income growth pattern in excess of agricultural income growth in the nation in the postwar period, and quite possibly did not perform as well as the nation in these terms. The rate of growth in per-farm income and changes in the capitalized value of farms in the state was less than national growth. Also, farm consolidation proceeded more slowly in this state. The deterioration of agriculture as a once viable economic base for many states has by no means by-passed the state of Nebraska. Instead, the impact of agricultural decline has been the more severe because Nebraska is so very dependent on agriculture and because the non-agricultural economic base has been underemphasized relatively.

The possibility that agriculture might be re-vitalized must be recognized. This could have a significant influence on the economy of this state because of the "leverage" which is inherent in Nebraska's continuing relative reliance on this sector. Leon Keyserling suggests that providing for sufficient demand for agricultural output should be a major policy objective of this nation.[10] His arguments are structured upon the existence of an unmet food and fiber need nationally as well as internationally and equity and poverty needs in the nation that are linked to the agricultural dilemma. While the thesis presented by Keyserling may be realized in the future, the likelihood of such a set of circumstances being developed is subject to much speculation and subjectivity. This does not appear to be a firm enough policy basis for ameliorating the past growth trends in this state. Moreover, in addition to seeking a more viable economic base, policy should provide for diversification within the confines of the resource base of the state. This requires that efforts be made to assist in the development of basic industry not linked to the fortunes of agriculture.

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[10] Leon H. Keyserling, Agriculture and the Public Interest (Washington: Conference on Economic Progress, 1965).

Specialization Patterns and Employment Shifts in the Non-Agricultural Sector

Growth comparisons in Nebraska employment by industry sector were dominated by the unfavorable mix effects in agriculture in earlier analyses (see Table V-1). Inclusion of the agricultural sector has the advantage of being complete, but the disadvantage that unfavorable farm employment patterns greatly influence the magnitude and nature of the growth gap, the mix effect, and the area or competitive (dis)advantage.

Analyses of the relative importance and growth patterns of non-agricultural sources of employment by sector in the postwar period are presented in Table V-7 for 44 industry sectors. The industry groups exclude certain categories of non-agricultural components, such as proprietors, self-employed, domestic workers, and unpaid family workers. In addition to this having an effect upon the trade and service sectors particularly, not including the agricultural component of employment has some disadvantages. The location quotients, for example, are generally overstated because

TABLE V-7

NON-AGRICULTURAL EMPLOYMENT IN NEBRASKA, 1963 AND LOCATION QUOTIENTS, 1958 and 1963[a]

Industry	1963 Employment		Location Quotient[c]	
	Number[b]	Percent Distribution	1958	1963
TOTAL	398.7	100.0	1.00	1.00
Mining	2.1	.5	.47	.45
Construction	24.7	6.2	1.02	1.19
Manufacturing	66.5	16.7	.54	.56
Construction Mat'ls.	3.6	.9	.35	.43
Prim. & Fab. Metals	5.2	1.3	.30	.32
Machinery & Transp. Equip.	13.7	3.4	.47	.62
Food Products	27.5	6.9	2.29	2.23
Meat	12.9	3.2	6.50	5.33
Dairy	3.1	.8	1.50	1.60
Grain Mill	3.6	.9	3.33	4.50
Bakery	2.2	.6	1.33	1.20
Printing & Publishing	5.5	1.4	.82	.88
Chemicals & Allied	2.2	.6	.33	.40
Transp. & Pub. Util.	36.8	9.2	1.38	1.33
Railroad	14.8	3.7	2.42	2.64
Motor Freight	7.3	1.8	1.33	1.12
Communications	8.0	2.0	1.29	1.33
Electrical & Gas Service	3.3	.8	.67	.73
Wholesale Trade	24.4	6.1	1.15	1.11
Retail Trade	73.9	18.5	1.19	1.21
Building Mat'ls., Hardware & Farm Equip.	6.9	1.7	1.80	1.89
General Merchandise	12.3	3.1	1.07	1.03
Food	10.5	2.6	1.04	1.08
Automotive	13.0	3.3	1.42	1.43
Apparel	4.2	1.1	.92	1.00
Home Furnishing	3.3	.8	1.12	1.14
Eating & Drinking	15.4	3.9	1.17	1.26

TABLE V-7
(continued)

Industry	1963 Employment		Location Quotient[c]	
	Number[b]	Percent Distribution	1958	1963
Fin., Ins., & Real Est.	24.4	6.1	1.24	1.20
Finance	9.0	2.3	.95	1.10
Real Estate	3.3	.8	.80	.80
Insurance	12.1	3.0	1.68	1.58
Services	61.2	15.3	1.10	1.06
Lodging	4.7	1.2	1.20	1.09
Personal	5.9	1.5	.88	.94
Misc. Business	4.3	1.1	.67	.65
Repair	3.2	.8	1.00	1.00
Recreation	3.9	1.0	1.33	1.11
Legal & Medical	19.6	4.9	1.45	1.32
Private Org. & Educ.	17.0	4.3	1.21	1.23
Government	84.7	21.2	1.37	1.30
State & Local	65.2	16.4	1.45	1.36
Public Utilities	5.8	1.5		
Education	30.5	7.6	1.50	1.31
Federal	19.5	4.9	1.16	1.17

[a] For a detailed explanation of industry grouping see the notes to Table A-27 of the Appendix.

[b] In thousands of persons.

[c] The ratio of employment in an industry as a percent of total employment in Nebraska to employment in that same industry nationally as a percent of total employment in the nation.

Source: Table A-27 of the Appendix.

the denominator value (total non-agricultural employment) is disproportionately small in the state compared to the nation.

Patterns of specialization in non-agricultural industries. Since 1948 non-agricultural employment in Nebraska increased 27.3 percent to a total of 398,700 persons in 1963. Specialization in mining employment has not changed appreciably since 1958, but the construction industry is relatively more important as a source of employment in the state than it is in the United States, as is indicated by the construction industry location quotient of 1.19 for 1963 (see Table V-7).

Nebraska is highly specialized in certain industries within the manufacturing sector as is revealed by the employment data in Table V-7. At the same time, the 1963 location quotient value for Nebraska manufacturing was .56, indicating that manufacturing is approximately one-half as important a source of basic employment to Nebraska as it is to the nation. Actually, this is an overstatement in the sense that the comparison basis is between national and state non-agricultural employment totals, and non-agricultural employment was much higher as a percent of total employment nationally than in the state. Data since 1958 do not indicate any appreciable relative increase in the proportion of Nebraska jobs in manufacturing compared to the nation.

The low location quotient values in Table V-7 are broadly indicative of the need to import manufactured goods and inadequate market access to this sector. The construction material manufacturing industry falls in this category, as do the primary metal and fabricated metal industries. The machinery and transportation equipment manufacturing industry, the chemical sector, and to a lesser degree, the printing and publishing industry also exhibited small location quotient values. Even though some of these sectors have grown rapidly over the postwar period, Nebraska did not increase its "self-sufficiency" in most of these import oriented sectors of manufacturing between 1958 and 1963.[11] The Nebraska location quotient in food and kindred industries, which comprised 6.9 percent of total non-agricultural employment in 1963, was 2.23. Relative to the United States, Nebraska is highly specialized in the meat product and grain mill components of the food processing sector. The meat product location quotient was 5.3 in 1963, down from 6.5 in 1958. The grain mill sector location quotient increased from 3.3 in 1958 to 4.5 in 1963.

Employment in Nebraska is somewhat concentrated in the transportation and public utility and the wholesale trade sectors compared to the United States.[12] This is particularly true for the railroad component of the transportation sector as this industry comprised 3.7 percent of all non-agricultural employment in Nebraska and exhibited a location quotient of 2.64 in 1963. The motor freight and communications components of this sector were more important sources of employment for Nebraska than for the nation, but the electrical and gas industry component was less important in the state than it was in the nation. Wholesale trade activities provided 6.1 percent of the total 1963 non-agricultural employment in Nebraska, which is slightly larger than the national average. Retail trade comprised 18.5 percent of the total non-agricultural employment in Nebraska in 1963, approximately the same relative importance that existed in 1958. In both years the retail trade location quotient approximated 1.2 for Nebraska. This is due in part to a concentration of employment in the automotive and the building materials, hardware, and farm equipment components of retail trade, where the location quotients in 1963 were 1.43 and 1.89 respectively.

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[11] Comparisons are not made for earlier years because the data lack sufficient detail.

[12] Employment patterns in the trade industry are subject to distortion because proprietors and the self-employed are excluded.

The insurance industry, a component of the finance, insurance and real estate sector had a 1963 location quotient value of 1.58, indicating relative specialization in the state. In 1963, 15.3 percent of all non-agricultural employment in Nebraska was related directly to the service industry. This represents a slight increase since 1958. Legal and medical services also are of somewhat greater relative importance to Nebraska than to the nation.

Government comprised a larger share of employment in the Nebraska economy than the nation, accounting for 21.2 percent of total non-agricultural employment in 1963 in the state and exhibiting a location quotient value of 1.3. Three-fourths of this employment was state and local, where the location quotient had a 1963 value of 1.36. Half of all state and local government employment is in education. The 1963 education location quotient value of 1.31 is smaller than the 1958 value of 1.5 for Nebraska. Federal government employment comprised approximately five percent of the total non-agricultural employment in Nebraska in 1963, slightly more than the national average.

Employment shifts in the non-agricultural sector. Analysis of growth trends and shifts in employment by industry (Table V-8) reveals that there has been an aggregate upward shift or a *favorable* growth gap from 1948 to 1963 of 3,700 persons in Nebraska non-agricultural employment. This comparatively favorable trend is more pronounced between 1958 and 1963, as the upward shift totals 5,400 persons in this latter period. This, of course, indicates that non-agricultural sources of employment in Nebraska have experienced an aggregate rate of growth which exceeds the national rate by a small margin. This is not true for all industry sectors, of course, and for this reason some consideration of shifts by industry sector is necessary.

Interestingly enough, an area or competitive disadvantage in non-agricultural employment growth has occurred over the entire post-war era. This pattern was not discernible earlier because agricultural employment exhibited an area advantage (i.e., declined less rapidly in the state than in the nation). The upward shift in non-agricultural employment of 3,700 persons between 1948 and 1963 was due to positive mix effects of 20,600 persons which were offset by the area disadvantage in Nebraska of 16,900 persons. Most of this competitive

TABLE V-8

NON-AGRICULTURAL EMPLOYMENT SHIFTS, 1948 to 1963 and 1958 to 1963[a]

Industry[b]	1948 to 1963			1958 to 1963		
	Growth Gap	Mix Effect	Area (Dis) Advantage	Growth Gap	Mix Effect	Area (Dis) Advantage
TOTAL	3.7	20.6	-16.9	5.4	3.4	2.0
Mining	1.3	- .4	1.7	- .6	- .6	0.0
Construction	2.3	1.9	.4	2.9	- .7	3.6
Manufacturing	1.5	- 8.8	10.3	.3	-2.2	2.5
Construction Mat'ls.	.7	- .9	1.6	.4	- .3	.7
Prim. & Fab. Metals	1.8	- .6	2.4	.1	- .3	.4
Machinery & Transp. Equip.	4.6	- .6	5.2	7.7	- .5	8.2
Food Products	- 6.3	- 7.7	1.4	-3.9	-3.2	- .7
Meat	- 3.6	- 1.2	- 2.4	-2.5	-1.5	-1.0
Dairy	- .9	c	c	- .4	- .6	.2
Grain Mill	- .8	c	c	- .1	- .4	.3
Bakery	- 1.6	- .8	- .8	- .8	- .4	- .4
Printing & Publishing	.2	0.0	.2	0.0	- .2	.2
Chemicals & Allied	.6	.1	.5	.2	0.0	.2
Transp. & Pub. Util.	-14.8	-13.5	- 1.3	-4.9	-4.5	- .4
Railroad	c	c	c	-3.4	-4.9	1.5
Motor Freight	c	c	c	- .6	.4	-1.0
Communications	c	c	c	- .9	-1.2	.3
Electrical & Gas Service	c	c	c	0.0	- .3	.3
Wholesale Trade	- 4.3	- .3	- 4.0	- .4	- .3	- .1
Retail Trade	- 4.6	1.1	- 5.7	1.9	- .3	2.2
Building Mat'ls.,Hardware & Farm Equip.	c	c	c	- .1	- .7	.6
General Merchandise	c	c	c	.2	.4	- .2
Food	c	c	c	.3	- .1	.4
Automotive	c	c	c	- .3	- .1	- .2
Apparel	c	c	c	- .1	- .3	.2
Home Furnishing	c	c	c	- .3	- .3	0.0
Eating & Drinking	c	c	c	1.6	.5	1.1

TABLE V-8
(continued)

Industry	1948 to 1963 Growth Gap	1948 to 1963 Mix Effect	1948 to 1963 Area (Dis) Advantage	1958 to 1963 Growth Gap	1958 to 1963 Mix Effect	1958 to 1963 Area (Dis) Advantage
Fin., Ins., & Real Est.	3.7	5.1	- 1.4	.4	.9	- .5
Finance	c	c	c	.6	- .5	1.1
Real Estate	c	c	c	.2	- .1	.3
Insurance	c	c	c	- .3	- .1	- .2
Services	10.6	12.8	- 2.2	3.6	5.5	-1.9
Lodging	c	c	c	- .2	.2	- .4
Personal	c	c	c	0.0	- .2	.2
Misc. Business	c	c	c	1.3	1.0	.3
Repair	c	c	c	.3	.4	- .1
Recreation	c	c	c	- .8	- .1	- .7
Legal & Medical	c	c	c	1.9	2.5	- .6
Private Org. & Educ.	c	c	c	.8	.6	.2
Government	8.0	22.7	-14.7	2.2	5.6	-3.4
State & Local	8.3	24.9	-16.6	2.5	6.4	-3.9
Public Utilities	c	c	c	c	c	c
Education	c	c	c	-3.2	.8	-4.0
Federal	- .5	.1	- .5	- .4	- .5	.1

[a] Thousands of persons.

[b] For a detailed explanation of industry grouping see Table A-27 of the Appendix.

[c] Data are not available.

Source: Table A-27 of the Appendix.

disadvantage occurred in three sectors: government (14,700 persons), wholesale trade (4,000 persons), and retail trade (5,700 persons).[13]

Construction and mining industries exhibited small upward shifts in employment and each sector experienced a state rate of growth in excess of the national rate. This is revealed as an area advantage. The unfavorable mix effect in manufacturing (-8,800 persons) was more than offset by an area advantage in employment growth in this sector in Nebraska of 10,300 persons, producing a net upward shift of 1,500 persons. However, the food products component exhibited an overall growth gap of 6,300 persons. There was a significant area disadvantage in the meat product industry of 2,400 persons coupled with unfavorable mix effects of 1,200 which accounts for the majority of the growth gap in food products since 1948. Transportation and public utility sources of employment experienced a large growth gap of 14,800 persons between 1948 and 1963, nearly all of which was due to unfavorable mix effects.

The trade industries had a combined growth gap of 8,900 persons due to an area disadvantage of 9,700 persons that was nearly equally divided between retail and wholesale activities. The finance sector experienced a positive growth gap; the services sector exhibited a net upward shift of 10,600; and the government sector grew more rapidly nationally in the aggregate but this was offset by larger mix effects which produced a net upward shift of 8,000 persons.

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[13] The trade sector is larger than is indicated in Table V-8 because these data exclude all self-employed, proprietors, unpaid family workers, and household workers.

Employment trends since 1958 can be examined in more detail for non-agricultural industries in Nebraska and this is the chief advantage of Table V-8, which reveals that the upward shift in employment in Nebraska from the 1958 to 1963 period occurred because of a favorable mix shift of 3,400 persons and an area advantage of 2,000 persons. This growth pattern represents a reversal in the area disadvantage which occurred over the entire 1948 to 1963 period that may be a significant development to the Nebraska economy.

There are several revealing shifts by detailed industry, only a few of which can be commented upon here. Shifts in employment in several of the manufacturing sector categories depicted in Table V-8 are worthy of special attention, and the positive growth gap in construction is noteworthy.[14] There is a very large area advantage and a net upward shift of 7,700 persons in the machinery and transportation equipment component of manufacturing industry which employed one-fifth of all Nebraska manufacturing workers in 1963. Food products, which employed 27,500 persons in 1963, (two-fifths of total manufacturing employment in the state) experienced a gap of 3,900 persons, due in no small measure to employment patterns in meat products. This reliance on food product industries, a slow growth sector, and a competitive disadvantage in meat industries particularly, is further evidence of the importance of and need for better economic balance. Other manufacturing industries experienced small employment shifts between 1958 and 1963. Manufacturing in general was subjected to the unfavorable mix effects so pronounced in food products because of dominant national trends.

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[14] The favorable shifts were not sufficient to offset declining employment opportunities in other sectors. See Table V-1, where agricultural employment in the state declined 11,600 persons between 1958 and 1963.

An overall growth gap of 4,900 persons occurred in the transportation and public utilities sector which employed 36,800 persons in 1963. This is due primarily to unfavorable mix effects, and most of the growth gap occurred in the railroad industry. The service sector experienced a positive growth gap in Nebraska of 3,600 persons from 1958 to 1963 in spite of a small area disadvantage which appeared to be generally applicable to several service components, particularly the legal, medical, recreation, and lodging groups. As a consequence in part of the upward shift in legal and medical employment, a positive net growth gap in the service sector was possible in spite of an overall area disadvantage of 1,900 persons in Nebraska. Trends in government employment since 1958 are similar to earlier patterns, as Nebraska experienced an area disadvantage in both periods compared to the nation, most of which appears to be attributable to the unfavorable employment growth patterns in state and local government education. Several additional growth comparisons might be made by industry. However, because manufacturing is important as a replacement for the larger relative economic base once provided by agriculture, it appears to be of some value to give special attention to this basic sector.

The Manufacturing Component of the Non-Agricultural Sector

Changes in value added in manufacturing. Analyses conducted earlier revealed that the manufacturing sector has grown more rapidly in the state than in the nation, although manufacturing has not grown rapidly enough to offset declining employment in agriculture in Nebraska. Table V-9 depicts recent trends in value added and capital investment in manufacturing for Nebraska.[15]

Value added in Nebraska in 1963 was 743.1 million current dollars, an increase of 39 percent since 1958.[16] Value added in the United States increased 35 percent from 1958 to 190.4 billion dollars in 1963. Most of the increase and the favorable growth in value added in Nebraska relative to the United States occurred in the 1959 to 1961 period which included a national recession.[17] The Nebraska economy evidently was affected less by this recession than the nation as measured by value added in manufacturing which increased from 569.9 to 659.6 million current dollars between 1959 and 1961 in Nebraska.

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[15] Value added is comprised of such things as wages and salaries, rent, depreciation allowances, non-salary research expenses, and profits. For further information see the introduction section to any recent issue of U.S. Department of Commerce, Bureau of the Census, Census of Manufacturers.

[16] All references to dollar magnitudes of value added and capital investment are unadjusted for price changes unless noted otherwise.

[17] For additional information in business fluctuations in Nebraska relative to the United States see Ronald A. Wykstra, Nebraska Economic Indicators: A Study of the Timing of Cyclical Fluctuations, Business Research Bulletin No. 70, University of Nebraska Bureau of Business Research, 1965.

TABLE V-9

VALUE ADDED, CAPITAL INVESTMENT, AND EMPLOYEE PAYROLLS IN MANUFACTURING, NEBRASKA AND THE UNITED STATES, 1954 to 1963

(current dollars)

Year	Value Added				New Capital Expenditures[a]		Total Employee Payroll (Millions of dollars)	
	Nebraska		United States					
	Millions of Dollars	Index 1958=100	Billions of Dollars	Index 1958=100	Nebraska	United States	Nebraska	United States
1963	743.1	139	190.4	135	46.1	11,102	347.6	99,725
1962	694.2	129	179.3	127	43.6	10,423	331.5	94,291
1961	659.6	123	164.2	116	39.3	9,764	319.5	88,128
1960	618.2	115	164.0	115	33.8	10,070	306.4	88,087
1959	569.9	106	161.3	114	35.5	8,801	289.2	85,642
1958	536.3	100	141.5	100	49.9	9,593	265.2	78,326
1954[b]	445.0	83	117.0	83	36.4	8,201	213.8	65,867

[a] Millions of dollars of investment expenditures for plants in operation and those under construction but not in operation.

[b] Data on value added are not adjusted for in process inventory for 1954. This adjustment reduces value added in Nebraska to 394.2 million dollars for 1954.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Manufactures: 1963 Preliminary Reports, MC63 (P)-4 and MC63 (P)-S28.

Over this same period of time value added by manufacturing in the United States increased relatively little (161.3 to 164.2 billion dollars). New capital investment expenditures in Nebraska appear to have increased mildly since the mid-1950's to an annual level of approximately 45 million current dollars in the mid-1960's. Capital expenditures in manufacturing in the nation have also increased since the early part of the 1950's, to approximately 11 billion current dollars in 1963. Employee payrolls totaled 347.6 million dollars in Nebraska in 1963, an increase of 62.6 percent in unadjusted payroll income since 1954. Over this same period of time total employee payrolls in manufacturing in the United States increased 49.2 percent to 99.7 billion dollars in 1963.

Aggregate manufacturing "productivity" comparisons. Value added comparisons between Nebraska and the United States generally reflect favorably upon manufacturing in Nebraska. However, this does not mean that productivity (as measured by value added per manhour) necessarily is greater in Nebraska than in the nation. The data of Table V-10 provide some comparisons of value added per manhour or productivity in manufacturing in Nebraska relative to the nation from 1954 to 1963.

Value added in manufacturing in Nebraska increased 88.5 percent compared to an increase of 62.7 percent for the nation during

TABLE V-10

VALUE ADDED, WAGES, AND MANHOUR DATA FOR MANUFACTURING, NEBRASKA AND THE UNITED STATES, 1954 to 1963[a]

	Nebraska	United States
Percent Change in Value Added (V.A.), 1954-63	88.5	62.7
Percent Change in Manhours (M.H.), 1954-63	7.4	1.9
Percent Change in Wages (W.), 1954-63	52.6	39.4
W./M.H. in 1963 Dollars	$ 2.37	$ 2.51
W./M.H., 1954-63 Percent Change	41.9	37.2
V.A./M.H. in 1963 Dollars	$ 7.65	$ 7.68
V.A./M.H., 1954-63 Percent Change	75.5	59.7

[a] Wages data are for production workers only.

Source: Table A-36 of the Appendix.

the 1954 to 1963 period.[18] Over this same 10-year period the consumer price index increased 13.1 percentage points to 106.7 in 1963.[19] The production wage component of value added increased 52.6 percent in

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[18] Value added data were not adjusted to real terms because no one index is appropriate. Table A-36 contains the raw data upon which the 1954 to 1963 productivity comparisons are based.

[19] Table A-13 of the Appendix portrays this consumer price index where the base year period is 1957-59.

Nebraska and 39.4 percent for the nation as a whole. This greater relative increase in production wages in Nebraska is a result of a more rapid increase in manhours worked in Nebraska, which increased 7.4 percent from 1954 to 1963. The change in manhours worked in the United States is a comparatively smaller 1.9 percent increase over this same period of time.

Table V-10 also depicts the wage-manhour (W./M.H.) ratio in 1963 dollars and the percentage change in this ratio between 1954 and 1963. A small gain on the national average was recorded between 1954 and 1963 for Nebraska wages per manhour. Between 1954 and 1963 wages per manhour increased 37.2 percent in the United States compared to a slightly larger increase of 41.9 percent in Nebraska, although average wages per manhour in Nebraska manufacturing are less than the national average. Value added per manhour is comparable in Nebraska to value added per manhour in the United States where it averaged seven dollars in 1963. This is a marked increase for both the nation and particularly for Nebraska since 1954. Value added per manhour increased 75.5 percent since 1954 in Nebraska, 15.8 percentage points more than the national increase.

Specialization, growth, and productivity in manufacturing. Table V-11 presents changes in value added and total employees in Nebraska and the United States between 1958 and 1963 by industry. In addition, this table contains information related to industry specialization as measured by value added distribution patterns in the state compared

TABLE V-11

GROWTH AND SPECIALIZATION PATTERNS IN MANUFACTURING INDUSTRIES NEBRASKA AND THE UNITED STATES, 1958 to 1963

Industry Sector	Percent Change, 1958 to 1963				Percent Distribution of Value Added (1963)	Specialization Index 1963[a]	Percent Change in Value Added Per Manhour, 1958 to 1963	
	Value Added		Employees					
	Nebr.	U.S.	Nebr.	U.S.			Nebr.	U.S.
All Manufacturing	38.6	34.8	12.3	6.2	—	b	24.0	23.1
Food Products	18.8	21.9	- 3.6	- 3.3	42.3	3.74	23.2	24.7
Meat	- 1.6	13.3	- 5.6	- 4.2	15.3	10.20	3.6	14.2
Dairy	6.6	16.7	- 7.2	-12.2	4.0	2.22	16.7	37.5
Grain Mill	59.9	19.5	11.5	- 1.7	9.1	7.58	41.2	21.5
Beverages	15.3	22.0	- 4.5	- 0.5	2.6	1.44	26.7	24.1
Misc. Food	50.1	27.5	- 2.5	- 1.5	3.8	3.17	45.9	32.4
Apparel	4.4	29.8	8.3	10.1	1.0	.24	- 9.2	14.4
Lumber & Wood	69.4	32.4	12.1	3.6	1.0	.45	39.4	20.5
Furniture & Fixtures	39.4	31.7	21.6	9.5	1.5	.94	26.7	14.9
Printing & Publishing	22.9	32.5	9.0	6.4	6.8	1.24	10.4	21.1
Chemicals	57.6	42.6	22.3	6.9	5.7	.62	36.6	32.5
Rubber & Plastics	56.9	40.1	23.0	19.8	2.1	.88	15.4	12.5
Stone, Clay & Glass	40.6	30.6	23.3	5.6	4.3	1.10	10.0	21.0
Primary Metals	27.6	28.1	66.1	2.1	3.5	.44	-31.0	14.4
Fabricated Metal	1.3	26.1	7.4	3.6	5.4	.87	3.6	15.2
Machinery (excl. Electrical)	72.8	36.4	1.8	8.5	6.4	.72	58.0	16.7
Electrical Machinery	185.4	57.1	62.7	31.2	8.8	1.02	86.2	21.7
Transportation Equipment	103.9	48.4	64.2	3.9	4.6	.39	25.3	37.7
Misc. Manufacturing	47.3	23.6	- 5.5	5.8	2.0	.65	41.7	18.1

[a] The Nebraska industry proportion of value added as a percent of total value added divided by this same ratio for each industry in the nation.

[b] It must be remembered that manufacturing in general is approximately one-half as important to Nebraska as it is to the nation whether measured by income, employment, or value added. Thus, these index values are over-stated relative to the total economy.

Source: Tables A-26, A-34, and A-35 of the Appendix.

to the United States. The increase in value added per manhour between 1958 and 1963 is also depicted in Table V-11 for Nebraska and the nation for 20 of the more important industry categories.

The increase in the number of employees in manufacturing in Nebraska of 12.3 percent between 1958 and 1963 was nearly twice as large as the national increase. However, the increase in value added in Nebraska of 38.6 percent from 1958 to 1963 was only 3.8 percentage points more than the national increase.[20] Value added per manhour increased 24.0 percent from 1958 to 1963 in Nebraska, approximately the national rate of growth.

Increases in value added were more rapid in some industry categories in the state than they were for the nation. In a few instances these relative changes were influenced by the small absolute size of the industry in the base year. Value added by the electrical machinery industry increased 185.4 percent in Nebraska compared to 57.1 percent in the United States. Another manufacturing industry which experienced a rapid expansion in value added between 1958 and 1963 in Nebraska was transportation equipment, which increased 103.9 percent compared to a national increase of less than one-half this amount. Value added by the machinery industry (excluding electrical machinery) also increased twice as rapidly in Nebraska as did the same sector in the United States where the increase was 36.4 percent. The lumber and wood manufacturing industry experienced an increase in value added in Nebraska of 69.4 percent compared to a 32.4 percent national increase. Other industries experiencing a more rapid rate of increase in value added in Nebraska than in the nation, as well as a more rapid rate of increase than the aggregate Nebraska increase, were chemicals (57.6 percent), rubber (56.9 percent), and the grain mill industry (59.9 percent).

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[20] Over this same period of time the consumer price index increased 6.1 percentage points.

Total 1963 value added in Nebraska manufacturing was 743.1 million dollars, 42.3 percent of which was related to the food products industry. The specialization index based upon value added data for this industry in Nebraska was 3.74 in 1963, indicating a high concentration of this industry in Nebraska relative to the United States.[21] The food products industry experienced a sub-standard increase in value added in both the nation and Nebraska compared to the all manufacturing average. This sector's importance to the Nebraska economy derives from the fact that it contributed 42.3 percent of total value added and absorbed 35.5 percent of new capital investment in the state in 1963.[22] The increase in value added in the food products sector in Nebraska of 18.8 percent was less than the national increase, while the 3.6 percent decline in the number of employees in this industry in the state between 1958 and 1963 was somewhat greater than the national decline. Changes in productivity (as measured by the increase in value added per manhour) were slightly more rapid in the nation than the state between 1958 and 1963. Value added per manhour in Nebraska for the food products industry was 81.6 percent of the national average of 7.7 dollars in 1963. The high labor intensity of this industry in Nebraska in comparison to the nation is evidenced by wages as a proportion of value added (33 percent in Nebraska and 24 percent in the United States).[23]

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[21] This index is the ratio of value added by an industry sector as a percent of total value added in Nebraska to the same percentage figure for the United States. Therefore, ratios in excess of unity indicate relative specialization.

[22] See Table A-36 of the Appendix for additional capital investment data.

The meat industry component of the food products sector is very important in Nebraska. Value added by the meat industry in Nebraska declined 1.6 percent between 1958 and 1963 while increasing 13.3 percent for the nation. The decline in the number of employees was 5.6 percent in Nebraska, 1.4 percentage points greater than the 4.2 percent decline for the nation. Over 15 percent of total value added in Nebraska in 1963 was contributed by meat industries; consequently, the Nebraska economy was penalized severely by trends in this industry which had a specialization index value of 10.2 for 1963. Approximately 12 percent of the total 1963 capital investment in manufacturing in Nebraska was in the meat industry which experienced an increase in value added per manhour of 3.6 percent compared to a much larger national increase of 14.2 percent. The labor intensity of value added in Nebraska in 1963 exceeded the national average for the meat industry (43 percent) by 12 percentage points, and average wages per manhour were $2.96 in the state compared to a national average of $2.50. These circumstances have contributed to the problems of the food manufacturing industry in Nebraska. The dilemma of this sector is perhaps best illustrated by the fact that the non-wage component of value added per manhour in this state at $2.46 is less than three-fourths the national non-wage value added of $3.37 per manhour.

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[23] These data also are given in more detail in Table A-36 of the Appendix. This table should be consulted for additional analyses of value added and manhours.

Growth performance in Nebraska grain mill manufacturing compares favorably to national performance in most respects. Value added by grain mill industries in Nebraska increased 59.9 percent between 1958 and 1963, a rate of growth approximately three times the national rate for this industry. The total number of employees increased 11.5 percent in Nebraska while declining 1.7 percent for the nation. This is an important industry to Nebraska manufacturing, contributing 9.1 percent of total value added in 1963. The specialization index value of 7.58 indicates great reliance on this industry in Nebraska compared to the nation. The increase in value added per manhour in the state between 1958 and 1963 was 41.2 percent, nearly twice the national change. However, value added per manhour in Nebraska in 1963 was $10.65, only 84.0 percent of the national rate on a manhour basis.

The dairy and beverage industries in Nebraska compare unfavorably in terms of increases in value added. Also, the total number of employees in the beverage sector declined 4.5 percent in Nebraska compared to a 0.5 percent decline in the nation, and value added increased 15.3 percent, about two-thirds the national rate. The state rate of decline in the number of employees in dairy industries was not as severe as the national decline of 12.2 percent even though Nebraska value added increased at about one-third the national rate of 16.7 percent. Nebraska again is more specialized in both of these industries than the nation. Value added per manhour was less in the state in 1963 than in the nation for both industry categories, and the increase in value added per manhour in the dairy industry was less than one-half the national increase from 1958 to 1963.

There are only three non-food manufacturing sectors which exhibited a specialization index value greater than unity for 1963 as measured by value added in manufacturing. These are printing and publishing (1.24); stone, clay, and glass (1.10); and electrical machinery (1.02). The specialization index in each of these three sectors is close enough to unity to suggest that they are not significant export industries for the Nebraska economy. The 1958 to 1963 increase in value added for printing and publishing, which accounted for 6.8 percent of 1963 value added, was less in Nebraska than the United States by 9.6 percentage points, and the increase in value added per manhour was one-half the national increase of 21.1 percent. However, the total number of employees increased 9.0 percent in Nebraska compared to 6.4 percent for the nation in this industry. Printing and publishing value added per manhour in Nebraska in 1963 was considerably less than the national average for this sector of $9.63.[24]

Electrical machinery is an important industry in that its contribution to total value added was 8.8 percent in Nebraska in 1963. Between 1958 and 1963 the total number of employees in this industry increased 62.7 percent in the state compared to 31.2 percent for the nation; value added increased 185.4 percent compared to a national increase of 57.1 percent; and value added per manhour increased 86.2 percent in Nebraska compared to 21.7 percent in the nation. Unlike the industries discussed previously, value added per manhour in electrical machinery in Nebraska is slightly larger than it is on a national average. This is also true for the stone, clay, and glass sector which contributed 4.3 percent of all value added in Nebraska in 1963. Value added by the stone, clay, and glass industry increased 40.6 percent in Nebraska and the number of total employees increased 23.3 percent between 1958 and 1963. The Nebraska increase in value added for this sector is 10.0 percentage points larger than the national increase and the increase in the total number of employees is 17.7 percent greater than the national increase. Value added per manhour in Nebraska was $8.50, about 13.0 percent higher than the national rate in stone, clay, and glass industries.

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[24] In Nebraska the comparable value was three-fourths this rate or $7.20 per manhour.

The large specialization index values of the above-mentioned sectors imply exporting to varying degrees and the existence of relatively favorable access to input and output markets in the past for these industries. Conversely, unfavorable market access and a tendency to rely on imports is typified by low specialization index values.[25]

The apparel industry is one of these import-oriented sectors as measured by the value added specialization index (.24 in 1963) shown in Table V-11. Similarly, the lumber, chemicals, primary metals, and transportation equipment industries appear to be import-oriented sectors in the Nebraska economy to varying degrees. It is generally desirable to increase the self-sufficiency of the state by further developing sectors which tend to be import-oriented. This has been happening in the above-mentioned cases except for the apparel sector, where state increases in value added and employment were sub-standard to the national increases between 1958 and 1963. Value added by lumbering industries increased 69.4 percent in Nebraska, more than twice the national increase, while the increase in the total number of employees (12.1 percent) was about four times as large in Nebraska as in the United States. Similarly, value added in the Nebraska chemical industry increased more rapidly (57.6 percent) than in the United States, and the total number of employees in this sector increased more rapidly in the state than in the nation. The chemical sector is an important industry, contributing 5.7 percent of total 1963 value added.

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[25] The specialization index of Table V-11 should not be interpreted too literally. It must be remembered that manufacturing is about one-half as important to the Nebraska economy at the present time as manufacturing is to the national economy. Therefore, the specialization index values of Table V-11 are roughly twice as large as they would be on an aggregate basis.

Value added per manhour is inferior to the national average for the apparel, lumber, and chemical industries. The increase in value added in the primary metal industry was roughly comparable to the national increase, but the total number of employees in this sector increased 66.1 percent in the state compared to a small national increase of 2.1 percent. A rapid rate of growth (64.2 percent) also occurred in total number of employees engaged in transportation equipment industries in Nebraska between 1958 and 1963 compared to a small national change. The increase in value added in the transportation equipment industries was 103.9 percent for the state as compared to 48.4 percent for the nation, although value added per manhour increased more rapidly for the nation. In most of the remaining sectors, value added was almost equally as important to the Nebraska economy as it was to the nation, and the increase in value added in Nebraska generally compared favorably to the nation.[26]

In summary, the absolute amount of value added per manhour was larger in Nebraska than in the nation in 1963 for all but the food, apparel, printing, and chemical industries. The overall rate of increase in value added per manhour was barely favorable to Nebraska manufacturing as value added per manhour in Nebraska increased at about the national rate. In the aggregate, manufacturing activity in Nebraska is unbalanced relative to the nation. Nebraska is heavily dependent upon the processing of agricultural products, and other manufacturing processes are less important to the Nebraska economy. In spite of the fact that the Nebraska food manufacturing sector grew less rapidly than total Nebraska manufacturing as well as less rapidly than the food sector in the nation, aggregate manufacturing growth performance in the state compares favorably to national changes on most counts. It must be remembered, however, that manufacturing activity in Nebraska furnishes only about one-half the total support for the state economy as it does for the nation on an average.[27] It appears that economic growth in manufacturing in the past would have been enhanced if policy measures could have successfully enlarged activities unrelated to the agricultural base in this state to a greater degree.

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[26] One notable exception to this is the fabricated metal industry.

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[27] This is roughly accurate by any one of several standards, including participation income, employment, or value added. For example, value added in 1963 was 500 dollars per capita in Nebraska but 1,009 dollars per capita in the nation.

Occupational Employment Patterns

The great diversity between the industrial structure of Nebraska and the nation cannot help being reflected in the occupational mix of human capital. Changing industry mix patterns have generated changes in the occupational skill level of the Nebraska labor force. While occupational data are available only on a limited basis, a brief analysis of the more important of these data is in order. A detailed statement of occupational trends is presented in the Appendix to this study (Tables A-28, A-29, and A-30). Tables V-12, V-13, and V-14 of this chapter present an aggregative summary of these Appendix data in the form of analysis of occupational shifts from 1950 to 1960.

The small increase in total Nebraska employment from 1950 to 1960 masks very significant occupational shifts. Table V-12 depicts the number employed by occupation category, the occupational distribution, and the increase from 1950 to 1960 in each major category. Professional occupations increased by nearly 12,000 persons to 9.9 percent of Nebraska employment in 1963. Service worker occupations (excluding private households) increased 31.8 percent accounting for 8.9 percent of 1960 employment. Clerical workers and operators also experienced large increases from 1950 to 1960. Farm managers declined in excess of an estimated 20,000 workers, or 20.2 percent. The decline in farm laborers was nearly 20,000 persons, or 45.9 percent, and non-farm laborer occupations declined by approximately 7,000 persons, or 25.2 percent.

TABLE V-12

TOTAL EMPLOYMENT BY OCCUPATION
IN NEBRASKA, 1950 and 1960

Occupation	1950		1960		1950 to 1960 Percent Increase
	Number	Percent	Number	Percent	
TOTAL	511,415	100.0	525,938	100.0	2.8
Professional & Technical	40,981	8.0	52,327	9.9	27.7
Farmers & Farm Mgrs.	107,833	21.1	86,020	16.4	-20.2
Mgrs. & Proprietors	44,125	8.6	47,686	9.1	8.1
Clerical Workers	53,288	10.4	67,247	12.8	26.2
Sales Workers	34,869	6.8	35,847	6.8	2.8
Craftsmen & Foremen	55,749	10.9	57,084	10.9	2.4
Operatives	51,206	10.0	61,659	11.7	20.4
Private Household Workers	7,245	1.4	11,708	2.2	61.6
Service Workers	35,614	7.0	46,957	8.9	31.8
Farm Laborers & Foremen	41,685	8.2	22,536	4.3	-45.9
Laborers	28,516	5.6	21,333	4.1	-25.2
Occupations Not Reported	10,304	2.0	15,534	2.9	50.8

Source: Tables A-28 and A-29 of the Appendix.

Employment Shifts by Occupation for Males

A statement of the occupation mix of the employed male labor force in Nebraska for 1950 and 1960 is presented in Table V-13. Again, this analytical approach is valuable because it provides a basis for comparisons which may lead to new insights. The Nebraska male labor force declined 5.7 percent from 385,100 to 363,300 persons over the 1950 to 1960 decade. As a consequence, a growth gap of 48,525 persons occurred, 21.2 percent of which is attributable to a competitive disadvantage of 10,300 persons as certain skill level categories increased less than comparable skill level groups in the nation. The growth gap from 1940 to 1960 was larger (77,922 persons), but there was a small area advantage during the 1940 to 1960 period of 2,800 persons as the total growth gap was due entirely to a disproportionate reliance on slow growth occupations in the male labor force. The appearance of an area disadvantage from 1950 to 1960 is not a favorable trend.

Over both periods the growth gap reflects declines in agricultural-related occupations. All other Nebraska occupational categories in total grew at least as rapidly as the national average, although there were unfavorable shifts in the laborer, manager and proprietor, and sales worker occupations in the state. Several occupations experienced a rate of growth in Nebraska inferior to that at the national level. For example, the professional and technical occupations exhibited an area disadvantage which was offset in both periods by upward mix shifts.

TABLE V-13

SHIFTS IN MALE EMPLOYMENT BY OCCUPATION IN NEBRASKA, 1940 to 1960 and 1950 to 1960 (thousands of persons)

Occupation	1960 Employment	1940 to 1960			1950 to 1960		
		Growth Gap	Mix Effect	Area (Dis)-Advantage	Growth Gap	Mix Effect	Area (Dis)-Advantage
TOTAL	363.3	-77.9	-80.7	2.8	-48.5	-38.1	-10.3
Professional & Technical	28.0	4.6	15.8	-11.3	4.7	9.6	- 4.9
Farmers & Farm Mgrs.	83.9	-64.6	-93.2	28.6	-30.1	-53.3	23.2
Mgrs. & Proprietors	41.0	- 3.1	5.0	- 8.1	0.0	- .2	.2
Clerical Workers	21.2	.9	3.3	- 2.5	- .3	1.4	- 1.7
Sales Workers	22.4	- 5.4	.7	- 6.0	- 1.9	2.0	- 3.9
Craftsmen & Foremen	55.1	12.1	13.3	- 1.2	- 2.8	2.7	- 5.5
Operatives	47.0	10.3	4.1	6.2	4.2	- .4	4.6
Service Workers	17.5	- .7	- .1	- .6	0.0	.3	- .3
Farm Laborers & Foremen	17.7	-35.8	-36.2	- .4	-16.8	-14.8	- 2.0
Laborers	20.5	- 2.4	- 5.3	2.8	- 8.2	- 4.4	- 3.9
Occupations Not Reported	9.1	6.9	11.8	- 4.8	2.9	18.9	-16.0

Source: Tables A-28, A-29, and A-38 of the Appendix.

Nebraska experienced significant competitive growth advantages only for semi-skilled male operatives and male farmers and farm managers from 1950 to 1960. This is also true for the longer 1940 to 1960 period, except that the occupational structure of employment in Nebraska also exhibited a tendency to grow in the unskilled laborers group at a rate in excess of the national rate. Within each of the broad occupational categories of Table V-13, there are occurring employment shifts of significance which are deserving of analysis. A brief consideration of each of these major occupational groups and some indication of the relative proportion of the labor force in each category may be useful.[28]

Professional and technical occupations. Nebraska is less specialized in professional and technical occupations than is the nation when measured by employment distribution patterns. This is evidenced by the ratio of the proportion of Nebraska males in an occupation to the national proportion. This produces a "specialization index" value of .75 for 1960 when 7.7 percent of all Nebraska males were classified in these occupations.[29] An upward employment shift (4,700 males) is exhibited for the professional group, although an area disadvantage of 4,900 persons occurred. The offset was provided by the positive mix shift of 9,600 persons between 1950 and 1960. The area disadvantage in this occupational group was more than twice this size from 1940 to 1960, which is a favorable trend.

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[28] The discussion which follows is based upon analyses of data contained in Table A-28 of the Appendix in addition to the data in Table V-13.

[29] The specialization index which is presented in Table A-38 of the Appendix is computed by dividing the ratio of employment in an occupation to total employment in Nebraska by employment in a national occupation to total national employment.

No one occupation within the professional and technical category exhibited a very large area disadvantage relative to the total, although area disadvantages in the engineering and teaching occupations were notable. In a few instances, specialization indices for certain components of this occupational group of male employment indicate that the Nebraska economy has a higher than national proportion in the occupation (e.g., clergymen and civil engineers). However, in spite of rapid growth between 1950 and 1960 in many of these high-level occupations, Nebraska is under-represented compared to the nation in several categories of high-level manpower. Engineers, for example (3,573 persons in 1960), increased 32.3 percent since 1950; but at the same time there was an area disadvantage of 864 persons and a specialization index value of .50 indicating Nebraska has one-half the national proportion in 1960. Both of these measures indicate that Nebraska did not grow proportionately in this occupational category since 1950. The natural scientists occupational group was another under-represented skill for both 1950 and 1960.

Farm managers and laborers. Farmers and farm managers in Nebraska in 1960 numbered 83,900, a decline of 21.3 percent since

1950. Nebraska exhibited a growth gap in this occupational group in excess of 30,000 persons from 1950 to 1960 and a gap twice that size from 1940 to 1960, as Table V-13 reveals. However, there was a significant area advantage because the Nebraska decline was much less rapid than the national decline. This is indicated by the upward area advantage shift of 23,200 persons from 1950 to 1960. It is also evidenced by the fact that the Nebraska specialization index for farm managers in 1960 was 4.21 compared to 2.69 in 1950. Male farm laborers decreased dramatically between 1950 and 1960 from 32,200 to 17,700, a decline of 45.2 percent. There is a small area disadvantage in this category (2,001 persons) accompanying large negative mix effects of 14,800 persons between 1950 and 1960. Specialization in Nebraska relative to the nation remained approximately the same between 1950 and 1960 in the farm laborer occupation.

Managers and proprietors. Employment in the managerial and proprietor occupational category for males in Nebraska was 41,000 persons or 11.3 percent of all male employment in 1960, an increase of 6.8 percent since 1950. No growth gap existed in this occupational category in the 1950 to 1960 period, but a small area advantage was offset by unfavorable mix effects. Changes from 1940 to 1960 and changes with the manager and proprietor occupation are favorable and rather significant. The 1940 to 1960 period reveals a growth gap of 3,129 persons and a large area disadvantage of 8,100 persons. Manufacturing proprietors are not as heavily represented in the Nebraska manager and proprietor occupational group as in the nation--

a fact indicated by the specialization index value of .63 for 1960. However, this category performed favorably since 1950 relative to national trends as is revealed by a net upward shift of 1,400 and an area advantage of 1,000 persons. The hardware and farm equipment component exhibited a specialization index value of 2.26, as would be expected in an economy heavily oriented toward servicing agriculture. A growth gap and area disadvantage did occur in the retail trade category of managerial occupations where employment declined 22.4 percent in Nebraska.

Clerical and sales occupations. The clerical and sales worker occupational categories for males in Nebraska both exhibited specialization index values of less than unity and small unfavorable growth gaps between 1950 and 1960. The growth gap in the clerical worker category was the result of an area disadvantage of 1,700 persons, most of which occurred in the mail carrier and clerical occupations. From 1940 to 1960 the clerical occupational group also experienced a small growth gap and a larger area disadvantage of 2,500 persons. An area disadvantage of 3,900 persons appeared in the sales worker category for 1950 to 1960. This was offset in part by mix effects which reduced the overall growth gap to 1,900 persons. This compares favorably to a larger growth gap of 5,400 persons between 1940 and 1960. A considerable proportion of the total area disadvantage in the case of sales workers is attributable to unfavorable employment trends in retail and wholesale trade occupations in Nebraska which failed to grow as rapidly in the state as they did in the nation.

Skilled and semi-skilled workers. The craftsmen and foremen occupational category for males in Nebraska numbered 55,100 in 1960, a meager 1.7 percent increase since 1950. The Nebraska specialization index value was .78 in 1960, approximately the 1950 value. The 5,500 area disadvantage from 1950 to 1960 is noticeable in comparison to the upward net shift of 12,100 persons from 1940 to 1960. Recent patterns of growth resulted in a growth gap of 2,800 persons from 1950 to 1960. Decidedly unfavorable growth patterns typify the more recent decennial period. A growth gap of 2,900 persons in the carpentry component accompanied by another growth gap of 1,300 persons in the auto mechanic occupational component contributed to these trends. Trends in the electrician occupational category also were unfavorable. The unfavorable shift in the auto mechanic group is the result of an area disadvantage in the Nebraska economy of 1,100 persons for the most part. Nebraska has a degree of over-representation relative to the nation in the telephone servicemen, auto mechanic, and excavation operator occupational classifications. Conversely, the specialization index denotes under-representation in the machinists and foreman categories, no doubt because of the lack of proportionate manufacturing activities.

Semi-skilled operative occupations. Operative workers increased 17.5 percent over the 1950 to 1960 period of time, exhibiting a favorable net shift of 4,200 persons. The specialization index for 1960 was .70 compared with .52 in 1950 for this occupational category, which comprised 12.9 percent of 1960 male employment. There was a large area advantage of 4,600 persons which was distributed across many occupational components related directly or indirectly to manufacturing. Auto service attendants exhibited an area disadvantage in Nebraska as did truck drivers, although the growth gap was positive in both cases because of mix shifts.

Service occupations and non-farm laborers. Employment of male service workers in Nebraska grew at approximately the aggregate national rate from 1950 to 1960. There were positive growth gaps in the janitorial and protective service components which were the two most important male occupations in the service worker category in Nebraska in 1960. Non-farm laborers decreased 23.8 percent between 1950 and 1960. The growth gap of 8,200 persons was comprised of an unfavorable mix effect of 4,400 persons and in addition, an area disadvantage of 3,900 persons. During the longer 1940 to 1960 period a smaller growth gap of 2,400 persons occurred.

Shifts in Female Employment

The female employed labor force in Nebraska grew less than the national rate, particularly from 1950 to 1960 when the growth gap was 6,820 persons, in spite of positive mix effects (see Table V-14). The 1950 to 1960 growth pattern was adversely affected by an area disadvantage which totaled 12,800 persons. The 1940 to 1960 growth gap was smaller (3,700 persons) and the area disadvantage in the female labor force was about equal to what it was from 1950 to 1960.

TABLE V-14

SHIFTS IN FEMALE EMPLOYMENT BY OCCUPATION IN NEBRASKA, 1940 to 1960 and 1950 to 1960 (thousands of persons)

Occupation	1960 Employment	1940 to 1960			1950 to 1960		
		Growth Gap	Mix Effect	Area (Dis) Advantage	Growth Gap	Mix Effect	Area (Dis) Advantage
TOTAL	162.6	- 3.7	8.8	-12.5	-6.8	6.0	-12.8
Professional & Technical	24.3	-10.9	- 1.0	- 9.8	-1.4	1.3	- 2.7
Farmers & Farm Mgrs.	2.1	- .8	- 1.7	.9	.5	- .4	.9
Mgrs. & Proprietors	6.7	- 1.1	.4	- 1.5	-1.0	-1.1	.1
Clerical Workers	46.0	8.5	15.2	- 6.8	1.5	3.9	- 2.4
Sales Workers	13.5	- 1.2	1.1	- 2.3	-2.8	-1.2	- 1.6
Craftsmen & Foremen	2.0	.8	.1	.7	- .2	- .4	.3
Operatives	14.6	4.6	- 1.5	6.1	- .4	-3.0	2.6
Service Workers	29.7	6.0	5.3	.7	3.5	2.7	.7
Private Household Workers	11.5	-16.0	-15.3	- .8	2.2	- .7	2.8
Laborers & Foremen[a]	5.8	2.6	- .9	3.5	-9.2	-8.1	- 1.1
Occupations Not Reported	6.4	3.7	7.1	- 3.4	.4	12.9	-12.5

[a] Includes farm laborers.

Source: Tables A-29 and A-38 of the Appendix.

Professional and technical workers. Several occupational groups contributed to the small growth gap in female employment. The professional and technical occupations, for example, experienced an area disadvantage of 2,700 persons and a positive mix effect of 1,300 persons, or a net growth gap of 1,400 persons from 1950 to 1960. A large area disadvantage existed in the female teaching occupations which increased 8.0 percent in Nebraska over the decennial period. The increase was much larger for teacher occupations in the nation as is indicated by the area disadvantage of 2,700 persons. At the same time, however, Nebraska has a large proportion of its female labor force classified as professional and technical as is evidenced by the index value of 1.15 for 1960.

Managers, farmers and laborers. The farm manager occupation group in Nebraska indicates trends different from those at the national level. Female farmers and farm managers increased 75.5 percent over the 1950 to 1960 decennial period. This small positive growth gap occurred in spite of a negative mix effect which failed to offset completely the Nebraska area advantage. The specialization index for Nebraska was 2.34 in 1960, nearly twice the 1950 value. Laborers and farm foremen in the female proportion of the labor force decreased from 11,000 to 5,700 persons from 1950 to 1960, a 48.4 percent decline over the decennial period. Most of the 9,200 growth gap shift is of the mix effect in this occupation group. The number of women in non-farm manager and proprietor occupations increased to 6,700 or 4.1 percent of the total female labor force in 1960. This is somewhat greater than the national average as is indicated by the 1960 specialization index value of 1.12

Clerical and sales workers. Nebraska aggregate employment trends were affected by trends in the clerical worker occupations, which increased 38.8 percent over the 1950 to 1960 decennial period. Clerical occupations exhibited a positive growth gap from 1950 to 1960 of 1,500 persons, in spite of an area disadvantage of 2,400 persons. Large and unfavorable growth gaps did occur, however, in telephone operator and stenographer occupations of 1,500 and 1,300 persons. Positive growth gaps were significant in the secretarial (3,600) and cashier (1,100 persons) occupations. These latter were related to upward mix effects. Sales worker occupations increased 10.9 percent over the decennial period in Nebraska, most of this coming in the area of retail trade. There was, however, an area disadvantage of 1,600 persons in female sales workers from 1950 to 1960. This, in combination with a slightly smaller mix effect, produced a growth gap of 2,800 persons from 1950 to 1960 and a decrease in the specialization index from 1.14 to 1.05.

Skilled and semi-skilled workers. The craftsmen occupational category is almost non-existent in the state. The female operative worker group increased 30.9 percent over the 1950 and 1960 decennial period as an area advantage of 2,600 persons existed. Employment growth does not compare favorably to the 1940 to 1960 increase, however. The specialization index increased from .46 to .59 between

1950 and 1960, but it remains much less than unity which is indicative of a relatively large amount of under-specialization.

Service and household workers. Positive growth gaps were exhibited in the private household and service worker occupations for females in Nebraska. In addition, trends toward increasing specialization in these two occupations are apparent. A large upward shift in the employment of hospital attendants contributed significantly to the favorable growth effects of these two occupational categories. Of the 29,700 female service workers in 1960, cooks and kitchen help, waitresses, and hospital attendants were most numerous.

Summary

The structure of the Nebraska economy has undergone significant changes in recent years which affect the utilization of human resources. These patterns of change have been traced in a very aggregative way by an examination of the employment structure of the entire economy. This was followed by limited analysis of data related to the agricultural sector; a review of certain patterns of growth in the non-agricultural sector, with particular emphasis on manufacturing; and an analysis of the occupational structure of the Nebraska labor force.

Growth in employment by industry in the postwar era reveals the existence of a wide 1950 to 1963 growth differential between the United States and Nebraska, culminating in an employment growth gap for 1963 of 62,200 persons. Growth patterns since 1958 reveal a continuing growth gap, but one which has diminished in intensity. Agriculture and manufacturing number among the "basic" industries in Nebraska exhibiting notable competitive advantages relative to national employment growth trends, while the "non-basic" or service oriented sectors tended to exhibit competitive disadvantages.[30] The competitive advantage shift in these "basic" industries which provide the means of payment for imports and services is more apparent than real, since the "advantage" is that employment declined less rapidly in the state than in the nation. As a consequence, Nebraska employment in non-basic sectors did not expand at a pace comparable to most states in the nation during the postwar period.

The agricultural sector numerically is the largest major industry in Nebraska in terms of 1963 employment. The gainful employment in Nebraska of manpower released from agriculture because of increasing productivity was not realized fully in the postwar era. Tapping the reservoir of human capital which may be released in the years immediately ahead must be a major policy objective in Nebraska. The typical farm in Nebraska was depicted earlier as producing more net income than the typical national farm, and similar circumstances prevail with respect to the value of farms. National postwar increases in farm valuation, however, exceeded Nebraska growth in farm valuation just as was true for income growth patterns. In short, agriculture in Nebraska appears to be productive and relatively vigorous compared to agriculture throughout the nation, although the large f[illegible] margin that the industry has enjoyed has diminished relati[illegible] national growth during the decade of the 1950's. This most certainly is the case in terms of net income and gross receipts from farm marketings. Total net farm income declined more rapidly in Nebraska (-12.0 percent) than in the nation (-9.5 percent) from 1949-51 to 1961-63, and the 20 percent increase in gross cash receipts in Nebraska was one percentage point below national growth.

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[30] The basic-nonbasic industry concept is the basis for analysis of multiplier impacts in the economic base context. The concept is based upon the premise that the lifeline of regional growth is that the output produced locally by the primary or the "basic" sectors which is sold beyond a region's borders generates the support for "non-basic" service or residential industries. For further detail see Walter Isard, Methods of Regional Analysis (Cambridge: The M.I.T. Press, 1960), pp. 190-98.

Non-agricultural employment growth in Nebraska exceeded national growth by a small margin from 1948 to 1963 as well as from 1958 to 1963. Nebraska is highly specialized in certain industries and very much under-represented in others, as might be expected. While there is no completely satisfactory way to measure specialization, comparing Nebraska and national employment distribution ratios by industry reveals that manufacturing represents about one-half or less the basic industry support that this sector provides for the nation. This is also true in the chemical, metals, machinery, and construction material industries of manufacturing. The food product sector (particularly the meat and grain mill industries) is heavily represented in the Nebraska industry mix. While the overall pattern of non-agricultural employment growth in Nebraska suggests performance slightly in excess of national growth rates, the Nebraska government and trade sectors exhibited competitive disadvantages. Manufacturing employment expanded more rapidly in Nebraska than in the nation, but declines in the employment growth rate of the food products sector detracted substantially from what otherwise might have been a more spectacular pattern of overall performance. Large growth gaps occurred in the food and meat products, transportation, and trade sectors from 1948 to 1963.

Particular attention was devoted to the manufacturing sector because of the importance of manufacturing as a "basic" industry and a potential replacement for the economic base once provided by agriculture which has contracted absolutely and relatively. The contraction in this base has been occurring in both gross and net income. The latter is obvious throughout this study and the former is illustrated by comparing gross transactions. The increase in the manufacturing value added part of transactions alone from 1954 to 1963 was 88.5 percent--about three times the rate of growth in gross income from agriculture which occurred over the longer period from 1949-51 to 1961-63. Value added from manufacturing in 1963 in Nebraska was almost three-quarters of a billion dollars, and gross transactions in manufacturing would produce a Nebraska manufacturing "spending stream" component several times as large as value added.[31]

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[31] In 1958 for example, the total value of shipment of construction machinery manufacturing firms was 3.5 million dollars compared to 871,000 dollars of value added. U.S. Department of Commerce, Bureau of the Census, Nebraska Census of Manufactures: 1958, MC58 (3)-26, pp. 26-7.

Manufacturing payrolls exceeded one-third of a billion dollars in 1963, and new capital investment approximated 45 million dollars in the early 1960's. Transactions in construction, mining, and services exceeded gross income flows in agriculture many times over, and total retail sales increased 60 percent from 1948 to 1963 while the increase in farm equipment sales was 35 percent.[32]

While it is not possible to summarize adequately the numerous growth comparisons that were developed in this chapter concerning the manufacturing sector, it is instructive to note that Nebraska increases in manhours, wages, value added per manhour, and wages per manhour were more rapid than in the nation. In 1963 the value added per manhour was 7.7 dollars in Nebraska and the nation, but this represented a 75.5 percent Nebraska increase since 1954 compared to a 59.7 percent increase for the nation. The machinery and transportation equipment manufacturing sectors, which generated about one-fifth of Nebraska value added, experienced an increase in value added approximately three times as large as the Nebraska all manufacturing average of 38.6 percent and more than twice as large as the national increase for these same industries. In contrast, the Nebraska food products sector, which accounts for more than two-fifths of Nebraska value added, experienced an increase in value added which was less than that experienced nationally for the same industry group and approximately one-half as large as the all manufacturing growth rate in Nebraska. Furthermore, the number of employees declined 3.6 percent in the food products group in Nebraska from 1958 to 1963 whereas the nation experienced a slightly smaller decline. Total manufacturing employment increased 12.3 percent in Nebraska from 1958 to 1963--twice the national rate of growth. This rate of overall Nebraska performance is all the more unusual when one recognizes the predominance of the employment declining food products sector in the Nebraska manufacturing industry mix. A particularly dismal employment growth prospect is presented by the meat product component of the food industry which is roughly 10 times as important to the state economy as it is to the national economy. Nebraska value added actually declined in this industry 1.6 percent compared to a national increase of 13.3 percent and the Nebraska ratio of value added to manhours increased 3.6 percent compared to a 14.2 percent increase for the nation.

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[32] See U.S. Department of Commerce, Bureau of the Census, Censuses of Business: 1948 and 1963.

The occupational structure of the Nebraska labor force reflects the structure of the Nebraska economy, and changes in the occupation mix between 1950 and 1960 mirror both state and national manpower trends. The 5.7 percent decline in male employment in Nebraska from 1950 to 1960 in conjunction with a national increase in male employment results in a 48,525 person male employment growth gap. This is comprised in part of a competitive disadvantage which is largest in the skilled manpower categories, professional and technical workers (-4,900 persons) and craftsmen and foremen (-5,500 persons). About four-fifths of the Nebraska growth gap in male employment is the result of a manpower mix heavily oriented towards slow growth occupations, such as farm managers, and farm and nonfarm laborers. These three occupations contributed heavily towards the total gap, exhibiting unfavorable shifts of 30,100, 16,800, and 8,200 persons respectively, from 1950 to 1960. While it is difficult to assess female occupational employment shifts precisely, in part because of large values in the "not reported" category, it appears that competitive disadvantages were most pronounced for females in the professional and clerical worker occupations. A definite competitive advantage was exhibited by growth trends in the semi-skilled operative occupations.

CHAPTER VI

CONCLUSIONS AND PUBLIC POLICY RECOMMENDATIONS

The immediate objective of this study as stated in Chapter I was to describe the nature of the Nebraska economy, observe the Nebraska rate of economic growth in a comparative context, and chart the past course of economic development. It was intended that this would provide a basis for formulating policy as well as furnish a base for additional research designed to identify more detailed circumstances and needs of the Nebraska economy.

The analytical framework was oriented to a general description of patterns of market access to inputs and outputs. Export and import tendencies and industry linkages in Nebraska were examined in an aggregative fashion. Agglomeration forces were implied in the concern expressed for out-migration rather than being specifically identified and treated for numerous sub-areas in Nebraska. One of the many areas which should receive additional research attention is the demographic patterns and economic geography of the state. The emphasis on aggregation in the methodology employed could not be avoided, given the broad scope of the problem being studied and the scarcity of prior research of this nature. While this may be viewed as a serious limitation by some, it may not be so important when it is remembered that the research effort was undertaken to facilitate and provide a broad base for less aggregative research efforts as well as programs intended to condition the future economic growth of Nebraska.

Manpower-related data have been the focal point throughout this study. The procedures used in this project relate directly to the importance of economic interdependence between Nebraska and the nation.[1] Much of the analysis is comparative in nature, using the nation as a benchmark and the shift-differential technique to identify those economic sectors making positive or negative contributions to overall growth in the economy.

There is probably no "right" benchmark to use, but use of the nation represents a normative comparison which is a compromise between extremes. It would be less realistic to make comparisons of Nebraska's growth relative to New York or Alabama. It would be of less value to fail to make normative comparisons which imply a desirable objective (e.g., the national growth rate). Making normative comparisons can have the effect of reducing economic misconceptions that can arise and that may restrict public policies designed to prompt further growth. Ignoring comparative patterns of growth may mask the existence of serious national as well as regional problems related to economic growth, unemployment, underemployment, poverty, and socio-economic imbalance. Ultimately, the Nebraska economy must become more directly assimilated into the economic mainstream of American life. Thus, both reasonableness and economic reality have contributed to the use of the nation as a "norm," although the writer readily admits that this (or any other) standard is imperfect.

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[1] See pp. 19-32 of Chapter I.

This concluding chapter has two objectives: (1) to provide a very brief appraisal of some of the highlights of economic growth and suggest the general need for economic growth policy in Nebraska; and (2) to present some tentative public policies which may ameliorate the record of relative economic decline which has pervaded the Nebraska economy in recent decades. It is important to recognize that this latter objective is based in part on personal interpretations and value judgments.

Patterns of Progress and Decline

The general indicators of economic growth. Three general conclusions emerge from the description of the Nebraska economy provided by this study.

1. Throughout most of the six decades of this century the Nebraska economy has not been as viable a participant in the economic mainstream of the nation as might be desired. The slower rate of economic growth in Nebraska relative to national progress has many implications and assumes many forms, including large amounts of human capital out-migration, inadequate job opportunities, income levels and growth rates substandard to those experienced at the national level, lower than national expenditures in support of

education, as well as the exporting of financial capital.[2]

2. The pattern of economic growth in the postwar period in Nebraska is generally consistent with the relatively inferior growth rates observed for the entire century; however, the size of the economic growth differential is less in some ways. Nevertheless, a sizable growth gap remains, and serious structural changes and sector declines have occurred between 1948 and 1963.

3. There is some evidence which suggests that the state economy may be near a "pivotal" point in the mid-1960's, although the evidence is by no means conclusive. This suggests that now may be an appropriate time to adopt policy measures to help direct economic development. It is possible that economic development can be pursued more vigorously than it has in the past, and it may be possible that economic growth will occur at a rate more nearly comparable to national growth in the future. The prevailing history of relatively poor economic performance over the time period with which these data are concerned renders suspect the natural occurrence

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[2] See Emmett J. Vaughan, "Capital Accumulation in Nebraska Since 1854" (unpublished Ph.D. dissertation, University of Nebraska, 1964), pp. 335-39 who notes that the combined effects of inferior capital investment outlets, a sluggish rate of investment, and the institutionalizing of savings have resulted in savings leaving Nebraska in debt instrument form. While this study has not specifically treated the economics of education, it can be noted that in 1964 the average expenditure per pupil was 484 dollars in the nation and 407 dollars in Nebraska, and the average teacher's salary was 6,235 dollars in the nation compared to 5,000 dollars in Nebraska. See U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1965, p. 125.

of the "pivotal point" thesis advanced above. Admitting to the realities of the Nebraska growth gap and a commitment to implementing policy in support of economic growth are two matters with which Nebraskans should become concerned.

Overall changes in the population, labor force, and income characteristics of the Nebraska economy provide sweeping insights into economic performance in this state. The average annual rate of growth of total real personal income in Nebraska for the six-decade period ending in 1960 was 2.28 percent, 1.17 percentage points below the national rate of growth for this same period. From 1948 to 1963 a real personal income growth gap which cumulatively is equal to 6.7 billion dollars appeared between the nation and state. This is the additional income which would have accrued to Nebraska if the state had grown at the national rate. The size of this growth gap is comparable to almost two years of personal income in the Nebraska economy as of the early 1960's. From 1948 to 1963 total real personal income in Nebraska grew at a rate of 2.42 percent compared to 3.76 percent for the nation. However, since 1958 the differential has narrowed, amounting to 0.8 percentage points as the Nebraska real income growth rate from 1958 to 1963 was 3.1 percent.

Value added in manufacturing grew less rapidly in Nebraska than the nation between 1900 and 1930. Since that time the rate of growth in value added in Nebraska has approximated the national increase. Value added in 1929 was 0.36 percent of total value added in the nation and 0.38 percent of the national total in 1958. In the postwar period, however, value added has increased more rapidly in Nebraska than for the nation as a whole, although the difference has been very small.

While several of the industry components of the manufacturing sector in Nebraska have grown at rates far in excess of the national rate, these do not include major agricultural-related sectors which have turned in substandard performances in the postwar period compared to overall manufacturing growth and compared to the food products sector in the nation. Manufacturing activities have grown rapidly in the postwar Nebraska economy, but this growth has not been rapid enough to absorb the large exodus of human resources from agriculture. While the manufacturing sector has generated income in excess of the national rate, it has not increased rapidly enough to offset the contracting agricultural base which provided one-third of personal income in Nebraska in 1948 but only one-eighth in the mid-1960's.

The Nebraska record of growth also has been substandard when compared to national growth in terms of real per capita income. A total growth gap differential the size of the one which existed between the nation and Nebraska from 1948 to 1963 has great significance. The 1948 to 1963 Nebraska rate of growth in per capita income was 1.45 percent compared to a national growth rate of 2.04 percent. Cumulatively, the 6.7 billion dollar growth gap in real personal income constitutes a sizable loss when spread over 1.4 million Nebraska residents. This comparison is not strictly accurate in that the national population growth rate is implied in obtaining the 6.7 billion dollar gap. Nebraska has exported large quantities of human and real capital in the postwar period, as well as throughout the entire century.

Human capital out-migration has the general effect of raising per capita income. Per capita income patterns are of questionable value when comparing regional economies wherein human resource fluidity is much greater than it is at the national level. One author has noted that ". . .states having net out-migration may be expected to have per capita income growing faster than the national average, while in states experiencing net in-migration per capita income may be expected to grow more slowly than the national average."[3] These circumstances are dependent upon changes in the age-structure which accompanies migration. Because a large proportion of migrants are concentrated in young age groups, many of whom are below the age of 25, and because this age group has earnings below the mean for all wage earners, migration initially increases per capita earnings in the origin area and decreases earnings in the destination area. Modification of these remarks is required insofar as migrant age- and sex-specific incomes vary, but these findings generally take on particular significance for slow growth areas. Harvey Perloff has observed that participation income per capita for the United States rose 350 percent from 475 dollars in 1940 to 1,649 dollars in 1956. During this same period, the per capita increase for the three heavy out-migration states of Alabama, Mississippi, and Arkansas ranged from 310 to 360 percent. California and Oregon experienced much in-migration along with lower per capita income increases of about 200 percent.[4]

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[3] Burton A. Weisbrod, "An Expected-Income Measure of Economic Welfare," Journal of Political Economy (August, 1962), 357.

Over the entire six decades of this century the Nebraska population growth rate was one-third the national rate of population growth. Three-quarters of a million persons have been estimated as net out-migrants in this century, and net out-migration has averaged approximately 10 percent of the average population in each of the three most recent decades. Approximately 80 percent of all net out-migrants from Nebraska have been under 45 years of age.

The size of the population growth differential was less from 1948 to 1963 than it was for the entire 60-year period. Nevertheless, the male labor force was smaller in 1960 than it was in 1940 or 1950, and the Nebraska working age population (over 14 years) actually declined from 1950 to 1960, all of this decline occurring in the male population. While the rate of net out-migration appears to have slackened since 1958, the Nebraska postwar growth gap in human resources was one-quarter of a million persons, nearly two-thirds of whom were net out-migrants. The approximately six percent decline in the Nebraska population between 14 and 44 years of age from 1950 to 1960 contrasts sharply with a six percent increase for this age category in the nation. According to Burton Weisbrod, the discounted "present value" of human capital in this age category is nearly four times as great as it is for persons over 55 years of age.[5] Interestingly enough, none of the economic areas in Nebraska exchanged migrants with other states on an even basis; i.e., all areas experienced net out-migration in the course of population exchange from 1955 to 1960, including Omaha and Lincoln. This information is normally concealed by the large influx of human resources from rural Nebraska to the two major metropolitan areas.

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[4] Harvey S. Perloff, _et al_., _Regions, Resources, and Economic Growth_ (Baltimore: Johns Hopkins Press, 1960), p. 597.

Structural changes in the Nebraska economy. Some of the more important conclusions which can be garnered from the structural analysis of this study are as follows.

1. The sluggish pattern of economic growth in Nebraska income and employment and the slow rate of accumulation of the stock of human capital has been influenced unfavorably by the orientation of the Nebraska industry mix towards economic sectors which have become relatively less important to the nation with the passage of time. Furthermore, the rates of growth and decline vary greatly from

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[5] This is a discounted (four percent) measure of the future average earnings capacity of human resources. See Weisbrod, _Journal of Political Economy_ (August, 1962), Table I, 361-63.

industry to industry and, in addition, the rates of growth and decline in manpower requirements have not been uniform.

2. During the postwar period the non-agricultural sector of the Nebraska economy grew at a rate slightly in excess of the nation's rate of growth. In certain important industry categories (e.g., manufacturing) Nebraska has experienced a competitive employment growth advantage relative to the nation.

3. The rate of decline in Nebraska agricultural employment has been less than the national decline, but net agricultural income earned in Nebraska has declined at a rate somewhat in excess of the national rate in the postwar era.[6] The intensity of agricultural decline exceeded the state's ability to absorb released human capital in other "basic" economic activities. This dilemma has been compounded by the fact that the food products component of manufacturing has grown at a rate below both the overall Nebraska manufacturing average and the comparable industry in the nation in the 1958-1963 era. Since the mid 1950's, employment in the food products component of manufacturing has actually declined. As a consequence of the absence of public policy efforts designed to provide adequate economic opportunities in other industries, numerous Nebraskans

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[6] According to a nationally prominant economist, a competitive advantage in agricultural employment shifts ". . .merely reflects a lot of underemployment which our basic data are not sufficiently precise to identify." Lowell D. Ashby, "Regional Economic Structures: Experience and Outlook," Mid-Continent Research and Development Proceedings, Papers presented at the Twelfth Annual Meeting, 1965, p. 33.

have been encouraged to leave the state and numerous others no doubt have accepted "underemployment" as a way of life.

4. These changes in the industrial structure of Nebraska employment have been reflected in the occupational mix of the Nebraska labor force. There has been some tendency towards a long-run retardation of growth in the skill content of the Nebraska labor force. This is evidenced in numerous ways, including shifts by occupation and the recognition that most net out-migrants have a larger than average future earnings capacity. The educational attainment levels of out-migrants are in excess of the state average, and this may constitute evidence of retardation in the skill content of the Nebraska labor force.

The industrial origins of income and employment have changed dramatically in the six-decade era with which this study is concerned. Over this entire period, growth in total employment was complemented by favorable net shifts in all but the agriculture, construction, and transportation and communication sectors.[7] Not surprisingly, all major industry categories except agriculture exhibited competitive disadvantages in employment over this long-run period. These negative shifts were very large in the services and public administration and trade, finance, and insurance sectors in response to the contraction of a major dimension of Nebraska's economic base--agriculture.

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[7] See Table II-5.

Two-fifths of Nebraska's total service income (wages, salaries, and proprietors' income) was generated by agriculture in 1900 compared to one-fifth for the nation. By 1960 service income earned in agriculture declined to 4.8 percent of the nation's total compared to 18.5 percent of total service income in Nebraska. Between 1948 and 1963 Nebraska service income earned in agriculture declined by about one-third of a billion dollars--an annual rate of decline of 3.77 percent compared to a national decline of 2.97 percent annually for this same component. However, total personal income in Nebraska increased one billion dollars over this period. Analysis of shifts in the industrial sources of participation income in the postwar era corroborated the negative absolute and relative growth contribution of agriculture and revealed, in addition, that the trade and transportation sectors have detracted from overall state performance.[8] In contrast, manufacturing and construction were positive influences on participation income growth in the postwar era.

The selection of a comparison period of time which accurately reflects growth and decline is particularly vexing in analyzing agricultural income patterns where annual variations in income are a serious analytical problem. To circumvent the problem inherent in yearly income variability, a three-year average comparison was made which further corroborated the net income growth patterns noted above. This analysis revealed in addition that gross farm income earned from the sale of farm output increased less in Nebraska than in the nation in the postwar period.

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[8] See Table III-7.

Shifts in total employment in Nebraska over the 1948 to 1963 period also tend to confirm the fact that the trade and service oriented sectors are at a competitive disadvantage relative to comparable national sectors. In many instances (e.g., services), this negative influence was offset by even larger positive mix effects which reduced the total Nebraska employment growth gap. Non-agricultural employment increased at a rate slightly in excess of the national rate in the postwar era.[9] Data indicate, however, that while manufacturing has been a positive influence on economic growth, the food products industry, and meat products in particular, have detracted from the aggregate manufacturing rate of growth in Nebraska in terms of growth in value added and employment. In contrast, the transportation equipment, machinery, chemicals, rubber and plastics, lumber and wood, and grain mill industries have positively conditioned aggregate growth in manufacturing.

Occupational needs have also changed dramatically in recent years in Nebraska. Whether Nebraska manpower development is abreast of the dynamic national economy of the 1960's has not yet been investigated fully.[10] This analysis indicates that some of the more important net shifts in the Nebraska labor force have been towards higher skill-level occupations. At the same time, Nebraska growth has been at a competitive disadvantage in comparison to national trends in certain occupations (e.g., the professional and craftsmen categories).

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[9] See Tables V-8 and V-9.

The preceding chapters are intended to help identify the present growth potential of certain broad industry sectors. This identification provides a convenient starting point for detailed feasibility analyses which are not within the scope of this study. The industry data contained in the main portion of this study can be used as a starting point to permit economic policy-makers to identify positive and negative influences in Nebraska growth. This is a necessary prerequisite to the formulation of effective economic policy.

An epilogue. Trends in labor force, population and income data from 1958 to 1963 occasionally suggest the possibility that Nebraska may be on the verge of a resurgence of economic growth. These signs are very tentative ones, but some of them worthy of note are: (1) area or competitive advantage shifts in total employment

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[10] The author is currently engaged in research on the economics of education in Nebraska and other Plains States. Also see a recent publication of the Area Development Department of Northern Natural Gas entitled "Vocational Training for Industry in the Northern Plains" (Omaha, 1965). This study indicates that less than one-half the estimated demands for vocational education are currently being met by vocational training in the Plains States, with Nebraska providing approximately 55 percent of estimated demand.

(see Tables V-1 or V-8) from 1958 to 1963 in contrast to a competitive disadvantage from 1950 to 1963; (2) an annual average growth differential unfavorable to Nebraska in personal income of 0.8 percentage points from 1958 to 1963 compared to 1.4 percentage points differential from 1948 to 1963; and (3) a much reduced annual rate of net out-migration from 1958 to 1963 in contrast to the entire postwar era.

Using preliminary estimates of changes in some of the major economic growth indicators from 1963 to 1965 is subject to the obvious hazards of estimating errors, a highly unusual period of expansion, and an unrepresentative time period for agricultural income data. Real per capita income in Nebraska increased 8.0 percent from 1963 to 1965, the same as the national rate according to preliminary estimates made by the United States Department of Commerce.[11] Total income in Nebraska increased to 3.5 billion dollars or 9.3 percent compared to an 11.0 percent national rise from 1963 to 1965. An even more dramatic and unusual Nebraska income rise may be recorded for 1966 according to the very tentative data recently issued by the McGraw-Hill Company.[12] Total

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[11] Personal income estimates for 1965 are from U.S. Department of Commerce, Office of Business Economics, Survey of Current Business, April, 1966, pp. 10-12. Employment data are from Nebraska Department of Labor, Monthly Labor Force Trends, Division of Employment. Population data are from U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P25, No. 324.

[12] See Business Week Information Services, Measuring Personal Income (New York: McGraw-Hill, Inc., May, 1966).

Nebraska non-agricultural employment increased at the average annual rate of 1.9 percent from 1963 to 1965, and the Nebraska population increased 4.7 percent from 1960 to 1965. Closer examination of these preliminary data reveals that the total Nebraska labor force actually declined from 645,100 to 635,711 persons from 1962 to 1965. Another example of why these data should be interpreted carefully is furnished by population growth patterns. The national increase in population from 1960 to 1965 was 8.0 percent. This is 3.3 percentage points in excess of Nebraska's rate of population growth.

One dimension to the state economy which may provide a built-in favorable growth bias is the simple fact that with the passage of time and the decreasing relative contribution of agriculture to the state economy the overall negative growth effects are felt less and less. Moreover, with the passage of time, economic growth has occurred in the "replacement" economic base provided in part by manufacturing. One might also argue that absolute employment declines in agriculture are not likely to occur in the future at the rate of the past. This is a more tenuous statement, however, as evidenced from the data analyzed earlier (Table V-2), and in view of the agricultural employment decline from 144,000 persons in 1963 to 127,000 persons in 1965, a decrease of 11.5 percent.[13] Then too, the arguments advanced by Keyserling which perhaps are being reflected in the 1966 income data for Nebraska may furnish insulation against continued relative economic decline in the future.[14] Like all of the 1963 to 1965 empirical data, however, Keyserling's hypothesis remains to be verified.

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[13] Nebraska Department of Labor, Division of Employment, Nebraska Labor Force Trends, Annual Supplement.

Policy Recommendations

This analysis has brought out many of the weaknesses in the Nebraska economy. Nebraska, however, can profit from knowledge concerning the past rate of economic development. The intent here is to assist in this by suggesting tentative proposals, any one or all of which may be useful in accelerating Nebraska's economic growth.[15] There is, of course, no evidence in this study that public policy will in fact help accomplish this purpose, although the rationale is generally felt to be valid. Some evidence of this is furnished by the extent to which several states have pursued economic development policies.[16] These recommendations hopefully will contribute to improving Nebraska's competitive position and close "growth gaps" noted in this study. These recommendations are not a direct part of this research, but they are the outgrowth of this interpretation of Nebraska's pattern of economic growth.

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[14] Leon H. Keyserling, Agriculture and the Public Interest (Washington: Conference on Economic Progress, 1965).

[15] These tentative recommendations are meant to be flexible. They are the outgrowth and synthesis of the author's reading of several regional economic policy statements. A representative sample that the reader might wish to consult would include W. Haber, E. McKean, and H. Taylor, The Michigan Economy (Kalamazoo: W.E. Upjohn Institute for Employment Research, 1959); Distressed Areas in a Growing Economy (New York: Committee of Economic Development, 1961); D. J. Gilmore, Developing the "Little" Economies, Supplementary Paper No. 10 (New York: Committee for Economic Development, 1959); J. M. Henderson and A.O. Krueger, National Growth and Economic Change in the Upper Midwest (Minneapolis: University of Minnesota Press, 1965); T.W. Schultz, "Capital Formation by Education," Journal of Political Economy (December, 1960); Jon G. Udell, Wisconsin's Economic Development, Bureau of Business Research (Madison: University of Wisconsin Press, 1965); and Economic Development for Kansas: An Action Program, Report Prepared by the Governor's Economic Development Committee, 1962.

These recommendations assume a realistic assessment of the Nebraska economy and allocation of adequate resources in support of greater industrial development and diversification. These recommendations are also contingent upon a solution to the current tax problems in Nebraska.[17] Figure VI-1 depicts the framework within which the tentative policies suggested below might be implemented. These recommendations differ in that the first four are organizational in nature, while the last five policy statements are addressed to functional areas or activities.

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[16] Arkansas, for example, has an annual budget of 160,000 dollars for economic research, 225,000 dollars for planning, and 475,000 dollars for promotion and industrial development. According to J. R. Peterson, Associate Director of the newly established Mississippi Research and Development Center, this state has a 1966-68 budget of 3.7 million dollars for economic planning and technical research, one-third of which will come from other than state resources (foundation grants and the federal government). In addition, the Mississippi Agricultural and Industrial Development Board has a 1966-68 budget for 2.0 million dollars, all of which is spent for economic development. Kansas and Iowa also have recently expanded into these activities on a broad scale. Nebraska currently spends 170,000 dollars annually in support of industrial development via the Division of Natural Resources. (Data were obtained in conversation from C. Hinkle, Director of Arkansas Industrial Development; J.R. Peterson of the Mississippi Research and Development Center; and David Osterhout, Director of the Nebraska Division of Natural Resources.)

[17] This is not dealt with here as it is covered in detail elsewhere. It can be noted in passing, however, that Nebraska state and local taxes and expenditures per capita are among the lowest in the nation. In 1963, state and local expenditures in Nebraska were 313 dollars per capita compared to 344 dollars for the nation, 345 dollars in Kansas, and 341 dollars in Iowa. Per capita revenues, taxes, and expenditures all show Nebraska to be about 10 percent below the national average and 12 to 15 percent below the neighboring states of Iowa and Kansas. Nebraska state and local expenditures per 1,000 dollars of personal income were 137 dollars in 1963 compared to an average

1. The Economic Growth Act. It is recommended that the political leaders of this state express their concern for and intent to pursue economic development policies vigorously through the passage of an "Economic Growth Act." In addition to affirming the intent of the legislative and executive offices, this legislation would require that the Governor of the State of Nebraska deliver an "Economic Report" annually and that a major legislative "Committee on Economic Development and the Economic Report" be created. This act should also provide for those practices and offices required in the implementation of all policies selected in support of the objective of increased Nebraska economic growth.

One of many factors which are important to economic growth is political leadership. Professor Walter Rostow has made the

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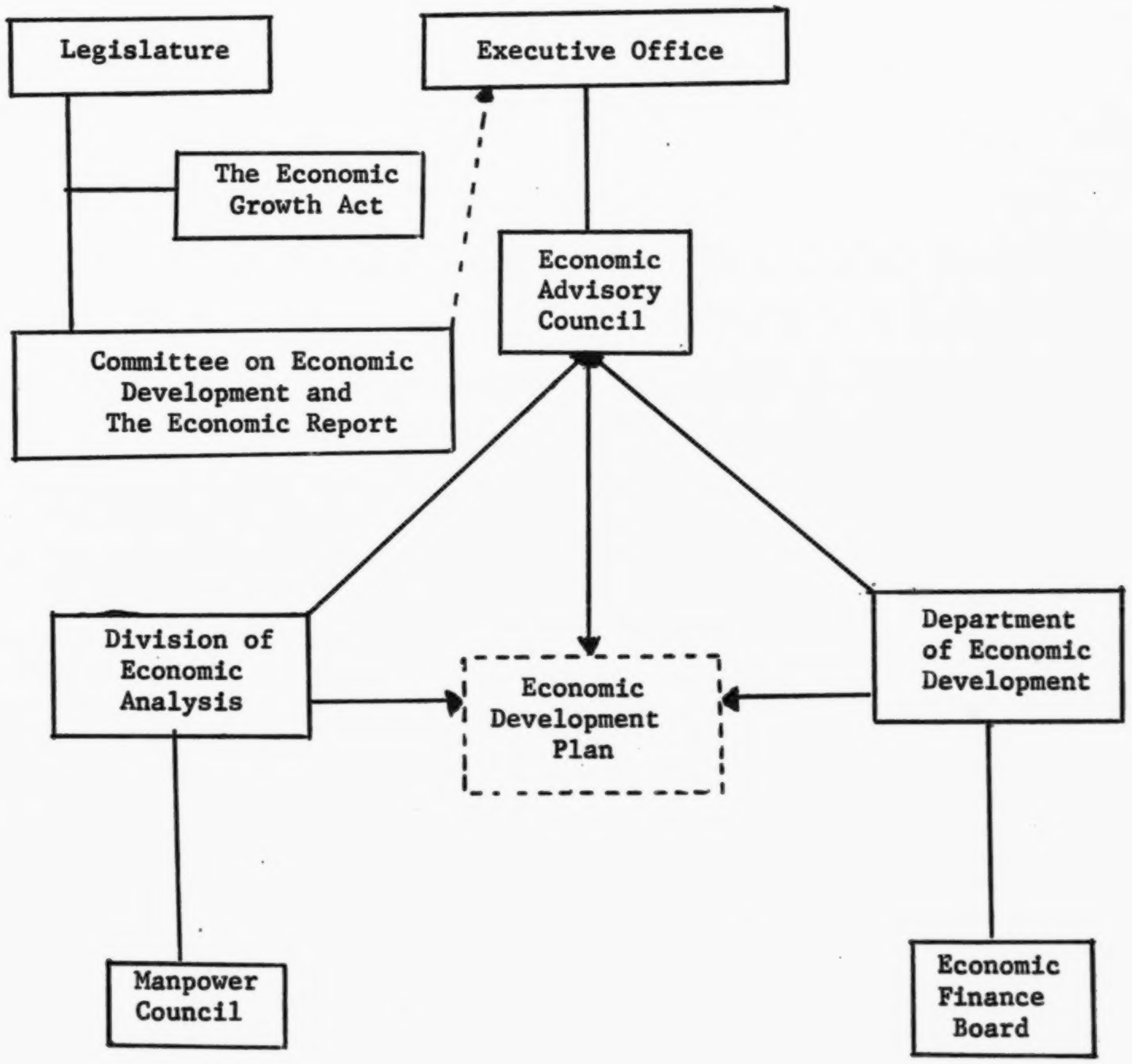
in excess of 150 dollars for Kansas and Iowa. U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1965, pp. 427-30. For additional information on the Nebraska tax situation see H. F. McClelland, Nebraska State and Local Finance, The Nebraska Legislative Council (Lincoln: Committee on Taxation, 1962) and the four-part series by E. Peterson, F. L. Olson, and J. D. Timmons, Let's Discuss: Nebraska Taxes, Numbers EC 62-817A I, EC 62-817B II, EC 62-817C III, EC 62-817D IV, College of Agriculture Extension Service (Lincoln: University of Nebraska, 1962).

FIGURE VI-1

A SUGGESTED PLAN FOR NEBRASKA ECONOMIC DEVELOPMENT


Legislature
Executive Office
The Economic Growth Act
Economic Advisory Council
Committee on Economic Development and The Economic Report
Division of Economic Analysis
Economic Development Plan
Department of Economic Development
Manpower Council
Economic Finance Board

following observation may apply to Nebraska even though the state is past the "take-off" stage:

> Until a definitive political transformation occurs--which harnesses national energies, talents, and resources around the concrete tasks of economic growth--the take-off is likely to be postponed.[18]

If the political leaders of a state are inhibited or dominated by attitudes and ties to a traditional society, regional economic growth, like the growth of underdeveloped nations, may be constrained.

2. Economic Advisory Council. A Council should be appointed to act in an advisory capacity to the Governor concerning matters pertaining to Nebraska economic growth and development. Representation on this Council could include (1) the Directors of the Division of Economic Analysis and the Department of Economic Development (see 3 and 4 below); (2) influential leader(s) from the business community; and (3) economist(s) from the academic community.

This Council probably should be charged with broad policy matters, such as the extent to which it is desirable to diversify the economic base as opposed to intensifying development along existing competitive advantage lines. In Nebraska, for example, this might require determination of the extent to which agricultural and non-agricultural objectives are pursued, or the degree to which further industrialization should proceed in the food products sector. Assuming that the trends depicted in the data examined in this study are accurate, it appears that agriculture represents an historical episode in the Nebraska economy rather than a precedent for future development. The food products industry most directly complements the existing economic base and is very important absolutely, but it is also growing less rapidly than manufacturing activities overall in Nebraska and the nation.

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[18] W. W. Rostow, "The Stages of Economic Growth," Studies in Economic Development, Edited by B. Okun and R. Richardson (New York: Holt, Rinehart, and Winston, 1962), p. 190.

3. Division of Economic Analysis. It is recommended that a Division of Economic Analysis be established as an agency within the Executive Department of the state government. The director, a full-time appointment made by the Governor, would serve as "Chief Economist" to the Governor and as chairman of the "Economic Advisory Council." This office would be responsible for coordination and accomplishment of, and contractural arrangement for, research on the state economy. There currently is no such agency able to provide the executive and legislative branches with objective information concerning the various economic needs and programs dealing with economic growth in the state. As a consequence, there is a lack of knowledge by governmental heads, political leaders, and the people of the state concerning economic development. Economic literacy must be expanded in the state. Factual information must be presented and squarely faced if the Nebraska economy is to be kept abreast of national growth dynamics.

The Division of Economic Analysis would be serviced by an advisory committee, the "Manpower Council," which should be appointed to deal with one of Nebraska's most important problems--manpower development and utilization. This Council should be comprised of concerned citizenry, as well as representatives of organized labor, education (particularly vocational education), and business leaders in the community. The objective of this Council would be to lend direction to and support for matters of manpower research and policy.

4. The Department of Economic Development. The present Nebraska Division of Resources should be elevated to departmental status and given a title which appropriately reflects its responsibility to coordinate state-wide efforts at industrial development and promotion, data collection and dissemination as requested by existing and potential firms, and community planning and betterment.

The department must assist in the financing of economic development. This may require the creation of an "Economic Finance Board" to report and be responsible to the Director of the Department of Economic Development. This Board, which may require approval by the electorate (or possibly can be created by the legislature) should coordinate federal, state, and local resources and have at its disposal the means to assist in financing the location of new firms or expansion of existing industries. This task is much too large and important to be performed on an ad hoc basis, and the competition presented by other states plus the complexity of the matter of financing requires special talent and attention. The Economic

Finance Board should be given wide latitude to function. It should also be given authority to provide adequate financial resources (e.g., through bond issues) for its stated objectives of financing industrial development.

This department might be given the added responsibility of coordinating and facilitating industrial and scientific research. An excellent example in Nebraska at the present time is furnished by the problems of the food products sector which is very important to Nebraska manufacturing in an absolute sense. This is an employment declining sector which is not growing rapidly in Nebraska. Therefore, food products probably should not receive priority over employment expanding and rapidly growing sectors, but the absolute size of the industry is such that research and technical assistance are needed. It may be necessary to assist this industry in financing replacement of antiquated capital equipment.

It is clear from national trends that superior research facilities must be developed in state institutions of higher learning and this department should relate this talent and capacity to the needs of the industrial community. The Department of Economic Development would serve as a "private research and development" center in this latter responsibility, concentrating on technical and market research in support of the desired industry mix of the state. In contrast, the Division of Economic Analysis would serve as a "resources research and development" center. The former office would not be involved in economic research, since there is a primary difference between promotion and an objective, analytical disclosure of the facts.[19]

5. Economic Development Plan. One of the primary functions of the Division of Economic Analysis and the Department of Economic Development would be to assume co-responsibility for drafting and implementing a detailed Economic Development Plan. This Plan might be used to chart the desired pattern of development, delineate objectives, explore means, and establish policies required to achieve economic growth and development. This program should be based upon sound research and diagnosis. The Economic Development Plan also should be a long-run synthesis of socio-economic goals and policy. This will require coordination with sub-areas within the state, cooperation from the Manpower Council, and particularly the corroboration of the Advisory Economic Council. The Economic Development Plan will have to be concerned with diverse matters including fiscal problems and policies, transportation, recreation, and resource conservation to name but a few.

6. Education and Economic Growth. It is imperative that Nebraska develop a skilled labor force which reflects the advancing technology and changing industry mix in the nation. Education and economic growth are natural complements and the former can contribute

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[19] This study is a case in point for separating economic research from the Department of Economic Development. The latter would hardly find the results of this research of promotional value, yet it may be of value in other ways.

greatly to productivity and technological change. The undereducated and unskilled are subject to underemployment and unemployment. One principle to which vocational education efforts in Nebraska might adhere is the training of youth in adequate numbers for jobs associated with "basic" economic activities. This does not mean that service occupations are not appropriate, but rather that the needs of economic growth and development be coordinated with manpower planning.

It must also be recognized that even with excellent education, a lack of employment opportunities can generate a labor force with few well-developed skills relative to capacity as well as result in out-migration. Thus, while sound technical education is an important pre-condition to greater growth, this effort should be closely coordinated with efforts to stimulate economic development. It is important, therefore, that the "Manpower Council" suggested earlier be represented by far-sighted education and vocational education interests in the state.

7. Expanded Federal Assistance. Like state economic development policy, there are two basic objectives to which federal assistance may apply: (1) increasing the efficiency and the rate of utilization of resources in the state; and (2) expanding the resources and opportunities within the state through attracting additional resources and activities. The rationale for additional assistance relates to the center-periphery hypothesis (see Chapter I) which recognizes that inter-regional terms of trade favor the center, or growth "poles." This is particularly true insofar as the

periphery is a producer of agricultural products, where ". . .the center-periphery relation may be described as essentially a 'colonial' one."[20]

Expanded federal assistance should be pursued in matters related to economic development for this state. Several of the Plains States may find it beneficial to pursue jointly special consideration in matters involving the location of government facilities and the impact of the federal government expenditures. A more diversified and intensely developed Nebraska may contribute to the solution of major national economic problems. This becomes a more reasonable request with the passage of time and the increasing national concern being expressed for the prevention of area-wide underemployment, poverty, underdevelopment, and economic distress.

8. Improved Socio-Economic Interaction. Key parties to the regional economic environment (e.g., labor, management, education, and government) must cooperate and collaborate in a joint search for larger economic opportunities. Management and labor should cooperate in an effort to reduce costs and increase productivity. An environment of good labor relations will encourage the expansion and location of industry. Cooperation between Nebraska's institutions of higher education and its industries can be expanded. Nebraska's universities have a history of strong support to the agricultural

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[20] John Friedman, "Regional Economic Policy for Developing Areas," Regional Science Association Papers, XI (1963), p. 44.

industry, but University efforts to assist the business and industrial community are of recent origin and normally are meagerly supported. A state government must have a genuine interest in and a sympathetic but temperate attitude towards the business community. The lack of concern is easily sensed and may influence decisions related to the location of industry.

9. Selective Industrial Development. Efforts should be made to encourage industrial development on a selective basis. It is important that Nebraska's government, communities, and existing industries cultivate those economic sectors which offer the greatest probability of long-run enlargement of the economic base of the state. This means that those rapid growth industries which are most complementary to the existing inter-industry relations in the state should be pursued. One corollary proposition to this is increased internal economic development. A major concern for and assistance to existing firms in Nebraska is also required to strengthen the state economy. It is a widely recognized fact that at least three-fourths of all industrial expansion is endogenous to large economic areas.

Efforts should be made to help shore up the defense against antiquated capital facilities and to promote rapid technological change in Nebraska's industry. This should not take the form of preserving the existing order or cultivating existing competitive advantages at the expense of diversifying and broadening into the more rapidly growing economic environment. While the earlier analyses have identified certain broad economic sectors contributing to or detracting from overall performance, more detailed research is required on key sectors. The industry mix in Nebraska must be comprised of more of the rapidly growing sectors, many of which are research oriented and technologically centered thereby requiring appropriate scientific facilities and talents. By 1980 employment in agriculture may be one-half the 1963 amount if this industry continues to substitute capital for labor at the rate of the past two decades. Hopefully, the 1965 to 1980 released agricultural labor force in Nebraska will find employment in the state. This requires investments and planning now. "Investment--in human resources, natural resources, in capital facilities--this has always been the classic road to economic advance and it still is."[21]

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[21] Harvey S. Perloff, How A Region Grows, Supplementary Paper No. 17 (New York: Committee for Economic Development, 1963), p. 145.

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APPENDIX A

APPENDIX A

Data in Tables A-1 through A-12 for the years 1880 to 1950 are from Everett S. Lee, *et al.*, *Population Redistribution and Economic Growth*, Volumes I, II, and III, published by the American Philosophical Society in 1957. This source should be consulted for information concerning adjustments and estimating procedures which affect portions of these data. Similarly, other data contained in this Appendix may be subject to qualifications enumerated in detail in censuses but not noted in this Appendix because of space limitations. All qualifications important to an objective interpretation of data in the judgment of the author have been noted in the footnotes to these tables or in the body of this study.

TABLE A-1

TOTAL AND PER CAPITA PERSONAL INCOME, NEBRASKA AND THE UNITED STATES, 1880 to 1960[a]
(millions of current dollars)

Year	Nebraska		United States	
	Total Income	Per Capita Income	Total Income	Per Capita Income
1880	71	156	8,740	175
1900	226	212	15,390	203
1920[b]	722	557	69,277	658
1940	578	439	78,522	595
1960	3,025	2,138	399,028	2,217

[a] Includes other income for 1940 and 1960. Alaska and Hawaii are included for 1960.

[b] Average for 1919 to 1921.

Source: Everett S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth: 1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 753 ff.; U.S. Department of Commerce, *Survey of Current Business*, August, 1964; and U.S. Department of Commerce, *Personal Income by States Since 1929*, p. 140.

TABLE A-2

INCOME COMPONENTS, NEBRASKA AND THE UNITED STATES, 1880 to 1960[a] (millions of current dollars)

Year	Service Income		Agricultural Service Income		Non-Agricultural Service Income		Property Income	
	Total[a]	Per Capita	Total[a]	Per Worker[b]	Total[a]	Per Worker[b]	Total	Per Capita
NEBRASKA:								
1880	64	142	25	254	39	730	6	14
1900	198	185	79	390	119	689	28	27
1920[c]	585	451	180	960	404	1,496	137	106
1940	479	364	122	735	357	1,200	73	55
1960	2,401	1,694	444	3,929	1,957	4,562	439	310
UNITED STATES:								
1880	7,373	148	1,968	228	5,405	622	1,367	27
1900	12,866	170	2,613	229	10,253	584	2,524	33
1920[c]	56,107	533	9,421	883	46,687	1,520	13,170	125
1940	62,666	475	5,599	644	57,067	1,394	12,709	96
1960	315,323	1,745	15,008	3,399	300,315	4,724	52,444	290

[a] Service income is the sum of wages and salaries and proprietors' income. Data do not include other income (largely government and business transfer payments).

[b] Average workers were obtained from census data for 1940 and 1960 (see Table A-6).

[c] Average for 1919 to 1921.

Source: Everett S. Lee, et al., Methodological Considerations and Reference Tables, Vol. I of Population Redistribution and Economic Growth: 1870-1950 (Philadelphia: American Philosophical Society, 1957), pp. 753-57; U.S. Department of Commerce, Survey of Current Business, August, 1964; and U.S. Department of Commerce, Personal Income by States Since 1929, pp. 146-73.

TABLE A-3

MANUFACTURING DATA, NEBRASKA AND THE UNITED STATES 1889 to 1958[a]

Year	Average Number of Wage Earners	Total Wages Paid	Value Added
NEBRASKA:			
1889	14.2	1.2	19.0
1909	20.1	11.4	43.9
1929	23.5	29.6	109.9
1947	37.3	87.4	260.7
1958[b]	42.9	174.2	536.3
UNITED STATES:			
1889	3,538.4	1,502.0	3,453.5
1909	6,271.2	3,209.2	8,188.5
1929	8,386.7	10,898.6	30,693.7
1947	11,892.7	30,208.0	74,353.6
1958[b]	11,644.2	49,503.8	141,270.3

[a] Millions of current dollars and thousands of persons.

[b] Figures for 1958 are based on employment of production workers for the payroll period ended nearest the 15th of March, May, August, and November. For prior years, they represent the average of 12 monthly figures of all wage earners.

Source: Everett S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States: 1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 683 ff.; and U.S. Department of Commerce, Bureau of the Census, *Census of Manufactures: 1958*, Vol. I, *Summary Statistics* and Vol. III, *Area Statistics*.

TABLE A-4

UNITED STATES GAINFUL WORKERS AND TOTAL LABOR FORCE, BY AGE AND SEX, 1880 to 1960[a]

(thousands of persons)

Year	Age Category						Total	Total
	10-13	14-24	25-44	45-64	65+	Unknown	10+	14+
Total								
1890	n.a.	6,805.1[c]	9,864.9	4,546.9	1,009.1	96.5	22,735.7	22,229.0
1900	790.6	8,640.6	12,541.9	5,803.9	1,202.5	93.6	29,073.2	28,282.5
1910	895.9	n.a.	n.a.	n.a.	n.a.	n.a.	38,167.4	37,272.0
1920	378.1	10,572.1	18,997.0	9,904.7	1,689.7	72.7	41,614.2	41,236.2
1930	235.4	11,599.9	22,323.6	12,421.7	2,204.9	46.6	48,829.9	48,594.5
1940	132.8	11,594.6	24,720.3	14,374.2	2,095.4	d	52,922.3	52,789.5[e]
1950	201.3	11,037.5	28,248.4	17,868.0	2,900.0	d	60,255.3	60,053.9
1960	n.a.	12,009.1	31,211.3	23,507.5	3,149.5	n.a.	n.a.	69,877.5
Male								
1890	n.a.	4,883.2	8,616.2	4,053.1	910.9	78.5	18,821.1	18,498.0
1900	585.7	6,223.4	10,698.5	5,106.4	1,063.9	75.9	23,753.8	23,168.1
1910	609.0	n.a.	n.a.	n.a.	n.a.	n.a.	30,091.6	29,483.0
1920	258.3	7,124.8	15,579.6	8,552.2	1,492.8	57.1	33,064.7	32,806.5
1930	162.3	7,662.3	17,776.9	10,506.6	1,938.7	31.0	38,077.8	37,915.5
1940	102.2	7,558.2	18,693.6	11,863.2	1,829.2	d	40,046.4	39,944.2[e]
1950	157.8	7,076.0	20,607.4	13,472.1	2,397.9	d	43,711.2	43,553.4
1960	n.a.	7,642.8	21,828.9	15,765.3	2,230.7	n.a.	n.a.	47,467.7
Female								
1890	n.a.	1,921.9[c]	1,248.7	493.8	98.2	18.0	3,914.6	3,731.0
1900	204.9	2,417.2	1,843.4	697.5	138.6	17.7	5,319.4	5,114.4
1910	286.9	n.a.	n.a.	n.a.	n.a.	n.a.	8,075.8	7,789.0
1920	119.8	3,447.3	3,417.4	1,352.5	196.9	15.6	8,549.5	8,429.7

TABLE A-4 (Continued)

Year	Age Category						Total	Total
	10-13	14-24	25-44	45-64	65+	Unknown	10+	14+
Female (continued)								
1930	73.1	3,937.6	4,546.7	1,915.1	266.2	13.4	10,752.1	10,679.0
1940	30.6	4,036.4	6,026.7	2,511.0	271.2	d	12,875.9	12,845.3[e]
1950	43.5	3,961.5	7,641.0	4,395.9	502.1	d	16,544.1	16,500.5
1960	n.a.	4,366.3	9,382.4	7,742.2	918.8	n.a.	n.a.	22,409.8

[a] The 1890 to 1930 data are based upon the gainful worker concept where the criteria were whether or not a person had a usual occupation during the year. Subsequent data are based upon labor force concept criteria which includes a person if he was in the labor force during the survey week. Data may not add due to rounding and inclusion of some unknown age groups in the censuses of 1890, 1900, 1920, and 1930. All data include employed, unemployed, inexperienced workers, and military.

[b] n.a. indicates data are not available.

[c] The 14 to 15 year portion of this age group was estimated on the basis of 1900 ratios of the 10 to 13 and 14 to 15 age groups.

[d] Indicates that data are too low for rounding.

[e] Does not include public relief workers.

Source: Everett S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States: 1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 519 ff.; and data for 1960 are from U.S. Department of Commerce, Bureau of the Census, *Census of Population: 1960*, Vol. I, *Population Characteristics*, Part 1, Table 82, p. 213.

TABLE A-5

NEBRASKA GAINFUL WORKERS AND TOTAL LABOR FORCE, BY AGE AND SEX, 1880 to 1960[a]

(thousands of persons)

Year	Age Category						Total	Total
	10-13	14-24	25-44	45-64	65+	Unknown	10+	14+
Total								
1890	n.a.	105.2[c]	183.8	66.2	9.9	1.0	368.0	365.9
1900	5.7	108.1	169.9	76.9	12.6	0.8	373.9	369.3
1910	4.2	n.a.	n.a.	n.a.	n.a.	n.a.	441.1	436.8
1920	1.3	111.1	219.0	108.3	16.4	1.0	457.1	455.8
1930	0.7	118.1	232.3	131.8	23.8	0.4	507.0	506.4
1940	0.5	109.5	218.2	149.9	23.4	d	501.6	501.0[e]
1950	1.5	103.5	223.6	167.5	32.3	d	528.2	526.9
1960	n.a.	102.2	222.5	191.6	40.2	n.a.	n.a.	556.5
Male								
1890	n.a.	79.6[c]	171.9	62.3	9.3	0.9	325.4	323.9
1900	5.0	83.4	154.7	71.8	11.8	0.7	327.3	322.4
1910	3.8	n.a.	n.a.	n.a.	n.a.	n.a.	377.8	374.0
1920	1.1	80.2	189.9	98.1	15.2	0.8	385.3	384.2
1930	0.6	83.7	195.6	115.4	21.7	0.3	417.3	416.7
1940	0.5	72.8	177.3	129.1	21.2	d	400.9	400.4[e]
1950	1.2	63.8	172.8	129.2	27.3	d	398.7	397.6
1960	n.a.	64.4	163.8	130.8	29.1	n.a.	n.a.	388.0
Female								
1890	n.a.	25.6[c]	11.9	3.9	0.6	0.1	42.6	42.0
1900	0.7	24.7	15.2	5.1	0.8	0.1	46.6	45.9
1910	0.4	n.a.	n.a.	n.a.	n.a.	n.a.	63.3	62.8
1920	0.2	30.9	29.1	10.2	1.2	0.2	71.8	71.6

TABLE A-5 (Continued)

Year	Age Category						Total 10+	Total 14+
	10-13	14-24	25-44	45-64	65+	Unknown		
Female (continued)								
1930	0.1	34.4	36.7	16.4	2.1	0.1	89.7	89.7
1940	d	36.7	40.9	20.8	2.2	d	100.7	100.6
1950	0.3	35.2	50.8	38.3	5.0	d	129.5	129.3
1960	n.a.	37.8	58.7	60.8	11.1	n.a.	n.a.	168.5

[a] The 1890 to 1930 data are based upon the gainful worker concept where the criteria were whether or not a person had a usual occupation during the year. Subsequent data are based upon labor force criteria which include a person if he was in the labor force during the survey week. Data may not add due to rounding and inclusion of some unknown age groups in censuses of 1890, 1900, 1920, and 1930. All data include employed, unemployed, inexperienced workers, and military.

[b] n.a. indicates data are not available.

[c] The 14 to 15 year portion of this age group was estimated on the basis of 1900 ratios of the 10 to 13 and 14 to 15 age groups.

[d] Indicates data are too low for rounding.

[e] Does not include public relief workers.

Source: Everett S. Lee, *et al*., *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth*, *United States*: *1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 519 ff.; and U.S. Department of Commerce, Bureau of the Census, *Census of Population*: *1960*, Vol. I, *Population Characteristics*, Part 29, Table 52, p. 154.

TABLE A-6

TOTAL AGRICULTURE AND NON-AGRICULTURE WORKERS AND EXPERIENCED CIVILIAN LABOR FORCE, 10 YEARS AND OLDER, NEBRASKA AND THE UNITED STATES, 1890 to 1960

(thousands of persons)

Year	Nebraska			United States		
	Agriculture	Non-Agriculture	Total	Agriculture	Non-Agriculture	Total
1890	184.0	184.1	368.1	9,235.3	13,500.4	22,735.7
1900	201.4	172.6	374.0	11,288.0	17,785.2	29,073.2
1910	202.5	238.6	441.1	12,389.8	25,777.5	38,167.3
1920	187.0	270.1	457.1	10,665.8	30,948.4	41,614.2
1930	197.2	309.8	507.0	10,472.0	38,357.9	48,829.9
1940[a]	165.9	297.5	463.4	8,700.4	40,925.0	49,625.4
1950	150.8	377.4	528.2	6,962.8	53,238.1	60,200.8
1960[b]	113.0	429.0	542.0	4,415.5	63,574.5	67,990.0

[a] The 1940 data exclude persons on public emergency work.

[b] The 1960 data are for the experienced civilian labor force 14 years and over. Other data estimated by Lee, *et al.*, are not strictly comparable to census labor force data, largely because these years include employed workers 10 years old and over and military.

Source: Everett S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States*: *1870-1950* (Philadelphia: American Philosophical Society, 1957), pp. 609 ff.; and 1960 data are from U.S. Department of Commerce, Bureau of the Census, *Census of Population*: *1960*, Vol. I, *Population Characteristics*, Part 1, Table 210, pp. 563-64, and Part 29, Table 126, pp. 394-95.

TABLE A-7

INDUSTRIAL DISTRIBUTION OF GAINFUL WORKERS AND EXPERIENCED CIVILIAN LABOR FORCE, 1880 to 1960[a]

(thousands of persons)

Industry	1880	1900	1940	1950	1960
Nebraska:					
All Industries	152.6	374.0	462.9	526.9	542.0
Agriculture	98.6	201.4	165.7	150.5	113.0
Forest, Fishing, Mining	.2	.4	1.1	1.3	2.1
Construction	7.9	17.7	22.6	34.4	34.5
Manufacturing	6.6	19.7	32.1	47.6	66.9
Transportation, etc.	7.9	24.8	36.2	47.6	45.0
Trade & Finance, etc.	11.8	49.3	93.1	116.2	127.9
Services & Pub. Adm.	19.5	59.0	102.8	112.5	138.0
Private Households	5.6	18.4	16.4	7.5	13.9
All Other	13.9	40.6	86.4	105.0	123.9
Not Reported	.1	1.7	9.3	16.4	14.6
United States:					
All Industries	17,392.1	29,073.2	49,492.6	59,981.3	67,990.0
Agriculture	8,590.3	11,288.0	8,588.1	6,835.4	4,415.5
Forest, Fishing, Mining	375.9	847.3	1,165.6	1,096.2	817.6
Construction	958.9	1,764.2	2,784.1	3,743.2	4,302.3
Manufacturing	2,349.4	4,252.6	11,465.0	15,187.9	18,535.9
Transportation, etc.	824.5	1,918.6	3,331.0	4,517.8	4,633.0
Trade & Finance, etc.	1,628.1	3,724.3	9,670.6	12,882.6	15,111.6

TABLE A-7 (Continued)

Industry	1880	1900	1940	1950	1960
United States: (continued)					
Services & Pub. Adm.	2,651.5	4,903.2	11,120.0	14,178.8	17,327.2
Private Households	1,197.6	1,970.8	2,303.9	1,487.6	2,036.2
All Other	1,453.9	2,932.5	8,816.2	12,691.2	15,291.0
Not Reported	13.5	375.0	1,368.1	1,539.4	2,847.1

[a] Data for 1880 and 1900 are based upon the gainful worker concept. The experienced labor force includes only persons with work experience. Data from the Bureau of the Census for 1960 are the experienced civilian labor force for persons 14 years old and over. Data for other years obtained from Lee, *et al*., included a military component which was comparatively small (in 1950 this factor was 3,300 persons in Nebraska and approximately 650,000 for the nation). This component was not included in the 1960 data because of its relatively larger size and unpredictable nature. Lee also excluded public emergency workers from his 1940 data (33,700 for Nebraska and 2,529,000 for the nation).

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Population: 1960*; and Everett S. Lee, *et al*., *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States: 1870-1950* (Philadelphia: American Philosophical Society, 1957), p. 627 ff. for 1880 to 1950.

TABLE A-8

POPULATION CHARACTERISTICS,
NEBRASKA AND THE UNITED STATES,
1890 to 1960[a]
(thousands of persons)

Year	Total	Male	Female	Urban[b]
Nebraska				
1890	1,058.9	572.8	486.1	291.6
1900	1,066.3	564.6	501.7	252.7
1910	1,192.2	627.8	564.4	310.9
1920	1,296.4	672.8	623.6	405.3
1930	1,378.0	706.3	671.6	486.1
1940	1,315.8	665.8	650.0	514.1
1950	1,325.5	667.3	658.2	621.9
1960	1,411.3	700.0	711.3	766.1
United States[c]				
1890	62,947.7	32,237.1	30,710.6	22,106.3
1900	75,994.6	38,816.4	37,178.1	30,159.9
1910	91,972.3	47,332.3	44,640.0	41,998.9
1920	105,710.6	53,900.4	51,810.2	54,158.0
1930	122,775.0	62,137.1	60,638.0	68,954.8
1940	131,669.3	66,061.6	65,607.7	74,423.7
1950	150,697.4	74,833.2	75,864.1	96,467.7
1960	178,464.2	87,864.5	90,599.7	124,699.0

[a] Totals may not add due to rounding.

[b] The 1940 definition of urban places (incorporated places of 2,500 or more inhabitants), applies to all years except 1950 and 1960. Since 1950 the urban classification includes specially defined urban fringes around cities of 50,000 or more and unincorporated places of 2,500 or more.

[c] Excludes all persons on Indian Reservations for 1890. United States data are for conterminous United States; i.e., the territory which comprised the United States at the time of the census.

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, Vol. I, Characteristics of the Population, Part 1, Tables 3 and 44, pp. 4 and 145, and Part 29, Tables 1 and 17, pp. 7 and 36; and Everett S. Lee, *et al.*, Methodological Considerations and Reference Tables, Vol. I of Population Redistribution and Economic Growth, United States: 1870-1950 (Philadelphia: The American Philosophical Society, 1957), Table P-4B.

TABLE A-9

UNITED STATES POPULATION BY AGE AND SEX,
1890 to 1960[a]
(thousands of persons)

Year	Age Category						Total
	10-13	14-24	25-44	45-64	65+	Unknown	14+
Total							
1890	n.a.[b]	n.a.	16,858.1	8,188.3	2,417.3	162.1	n.a.
1900	6,511.7	16,459.6	21,297.4	10,400.0	3,080.5	200.6	51,438.1
1910	7,259.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	8,594.9	20,753.9	31,278.5	17,030.2	4,933.2	148.7	74,144.5
1930	9,622.4	24,804.9	36,152.9	21,415.0	6,633.8	94.0	89,100.6
1940	9,340.2	26,327.1	39,672.3	26,084.3	9,019.3	n.a.	101,103.0
1950	8,980.1	24,237.7	45,209.6	30,637.3	12,269.6	n.a.	112,354.2
1960	13,964.3	26,599.5	46,644.9	35,932.3	16,525.0	n.a.	125,701.7
Male							
1890	n.a.	n.a.	8,829.6	4,257.4	1,233.7	103.5	n.a.
1900	3,289.7	8,168.3	11,097.6	5,464.9	1,555.4	127.4	26,413.6
1910	3,665.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	4,336.0	10,234.2	16,028.9	9,115.0	2,483.1	92.9	37,954.1
1930	4,862.2	12,301.1	18,238.3	11,171.1	3,325.2	51.8	45,087.5
1940	4,734.2	13,090.7	19,685.8	13,371.2	4,406.1	n.a.	50,553.8
1950	4,570.9	12,007.2	22,184.6	15,322.9	5,797.0	n.a.	55,311.7
1960	7,099.4	13,200.4	22,800.7	17,554.4	7,484.0	n.a.	61,040.5

TABLE A-9 (Continued)

	Age Category						Total
Year	10-13	14-24	25-44	45-64	65+	Unknown	14+
Female							
1890	n.a.	n.a.	8,028.5	3,390.9	1,183.6	58.6	n.a.
1900	3,222.0	8,291.3	10,199.8	4,935.1	1,525.1	73.2	25,024.5
1910	3,593.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	4,258.9	10,519.7	15,249.6	7,915.2	2,450.1	55.8	36,190.4
1930	4,760.2	12,503.8	17,914.6	10,243.9	3,308.6	42.2	44,013.1
1940	4,606.0	13,236.4	19,986.5	12,713.1	4,613.2	n.a.	50,549.2
1950	4,409.2	12.230.5	23,025.0	15,314.4	6,472.6	n.a.	57,042.5
1960	6,864.9	13,399.1	23,844.2	18,376.7	9,041.0	n.a.	64,661.0

[a] Data are exclusive of Alaska and Hawaii for the United States.

[b] n.a. indicates data are not available.

Source: Evertt S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States: 1870-1950* (Philadelphia: American Philosophical Society, 1957), Table L-2; and U.S. Department of Commerce, Bureau of the Census, *Census of Population: 1960*, Vol. I, *Characteristics of the Population*, Part 1, Table 16, pp. 18-22 and Table 46, pp. 148-49.

TABLE A-10

NEBRASKA POPULATION BY AGE AND SEX,
1890 to 1960
(thousands of persons)

Year	Age Category						Total 14+
	10-13	14-24	25-44	45-64	65+	Unknown	
Total							
1890	n.a.[a]	n.a.	303.2	112.7	23.3	1.6	n.a.
1900	98.3	235.9	291.2	137.8	34.7	1.7	701.3
1910	97.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	106.7	261.4	377.4	200.3	64.3	2.5	905.9
1930	109.4	279.8	393.6	236.3	86.2	.7	996.6
1940	94.2	256.6	370.3	276.0	105.7	n.a.	1,008.6
1950	77.2	215.1	364.6	285.7	130.4	n.a.	995.8
1960	107.5	204.0	340.1	288.0	164.2	n.a.	996.2
Male							
1890	n.a.	n.a.	175.2	64.8	13.0	1.2	n.a.
1900	49.8	120.9	160.6	77.4	19.5	1.2	379.6
1910	49.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	53.9	131.2	197.0	109.9	34.7	1.6	474.4
1930	55.5	140.8	199.8	124.9	46.3	.4	512.2
1940	48.1	128.0	184.1	142.2	54.6	n.a.	508.9
1950	40.6	107.8	182.8	143.7	64.4	n.a.	498.7
1960	54.8	101.2	169.7	141.4	76.4	n.a.	488.7

TABLE A-10 (Continued)

Year	Age Category						Total
	10-13	14-24	25-44	45-64	65+	Unknown	14+
Female							
1890	n.a.	n.a.	128.0	47.9	10.3	.4	n.a.
1900	48.5	115.0	130.6	60.4	15.2	.5	321.7
1910	48.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	52.8	130.2	180.4	90.4	29.6	.9	431.5
1930	53.9	139.0	193.8	111.4	39.9	.3	484.4
1940	46.1	128.6	186.2	133.8	51.1	n.a.	499.7
1950	38.2	107.3	181.8	142.0	66.0	n.a.	497.1
1960	52.7	102.7	170.4	146.6	87.8	n.a.	507.5

[a] n.a. indicates data are not available.

Source: Everett S. Lee et al., Methodological Considerations and Reference Tables, Vol. I of Population Redistribution and Economic Growth, United States: 1870-1950 (Philadelphia: American Philosophical Society, 1957), Table L-2; and U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, Vol. I, Characteristics of the Population, Part 29, pp. 31-34.

TABLE A-11

PERCENTAGE DISTRIBUTION OF THE TOTAL LABOR FORCE, NEBRASKA AND THE UNITED STATES, 1890 to 1960[a]

Year	Percent Male		Age Category									
			14-24		25-44		45-64		65+		Unknown	
	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.	Nebr.	U.S.
1890	88.4	83.1	28.7[b]	30.5	50.2	44.2	18.2	20.4	2.7	4.5	0.3	0.4
1900	87.5	81.9	29.4	30.6	46.1	44.3	20.9	20.5	3.4	4.3	0.2	0.3
1910	85.6	79.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1920	84.3	79.6	24.4	25.6	48.0	46.1	23.8	24.0	3.6	4.1	0.2	0.2
1930	82.3	78.0	23.3	23.9	45.9	45.9	26.0	25.6	4.7	4.5	0.1	0.1
1940	79.9	75.7	21.9	22.0	43.6	46.9	29.9	27.2	4.7	4.0	n.a.	n.a.
1950	75.5	72.5	19.6	18.4	42.4	47.0	31.8	29.8	6.1	4.8	n.a.	n.a.
1960	69.7	67.9	18.4	17.2	40.0	44.7	34.4	33.6	7.2	4.5	n.a.	n.a.

[a] Number in the age category as a percent of the total labor force 14 years old and over. Data prior to 1940 are based upon the gainful worker concept. See note (a) of Table A-4 and Table A-5 of the Appendix for further explanation of this concept.

[b] Does not include the 14-15 age bracket.

Source: Tables A-4 and A-5 of the Appendix.

TABLE A-12

TOTAL LABOR FORCE PARTICIPATION RATES, NEBRASKA AND THE UNITED STATES, 1890 to 1960 (percent)

Year	All Ages[a]		Age Category					
			16-24		25-44		45-64	
	Male	Female	Male	Female	Male	Female	Male	Female
Nebraska								
1890	76.2	12.4	75.6	26.5	98.1	9.3	96.0	8.0
1900	76.2	12.6	77.9	24.8	96.3	11.6	92.7	8.5
1910	76.8	14.6	b	b	b	b	b	b
1920	72.9	14.8	72.5	28.5	96.4	16.1	89.3	11.2
1930	73.5	16.7	71.5	30.1	97.9	18.9	92.4	14.7
1940	72.0	18.5	68.4	34.8	96.3	22.0	90.8	15.5
1950	73.9	24.2	71.8	37.8	94.5	27.9	89.9	27.0
1960	71.5	30.1	72.7	42.0	96.5	34.4	92.5	42.0
United States								
1890	77.3	17.0	79.9	30.2	97.6	15.6	95.2	12.6
1900	80.0	18.8	83.9	31.6	96.4	18.1	93.4	14.1
1910	81.3	23.4	b	b	b	b	b	b
1920	78.2	21.1	80.6	37.6	97.2	22.4	93.8	17.1
1930	76.2	22.0	74.1	37.3	97.5	25.4	94.1	18.7
1940	72.4	23.3	69.1	36.7	95.0	30.2	88.7	19.8
1950	73.0	26.9	68.5	38.0	92.9	33.2	87.9	28.7
1960	69.3	29.5	68.4	38.9	95.2	39.2	89.4	42.0

[a] Participation rate pertains to persons 10 years of age to 65 and over for 1890 to 1950. For 1960 these rates represent the labor force 14 years and over as a percent of the population 10 and over.

[b] Data are not available.

Source: Evertt S. Lee, *et al.*, *Methodological Considerations and Reference Tables*, Vol. I of *Population Redistribution and Economic Growth, United States: 1870-1950* (Philadelphia: American Philosophical Society, 1957), Table L-3, pp. 594-96 and 605-07; and for 1960 Tables A-4, A-5, A-9, and A-10 of the Appendix.